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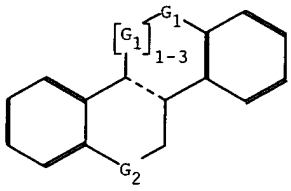

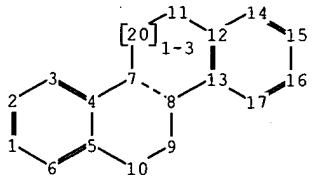

ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 20
ring bonds :
1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-10 7-8 7-20 8-9 8-13 9-10 11-12 11-20 12-13
12-14 13-17 14-15 15-16 16-17
exact/norm bonds :
4-7 5-10 7-8 7-20 8-9 8-13 9-10 11-12 11-20
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 12-13 12-14 13-17 14-15 15-16 16-17

G1:O,S,C

G2:O,S

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 20:Atom

```
=> d his

     (FILE 'HOME' ENTERED AT 16:57:45 ON 23 MAR 2005)

     FILE 'REGISTRY' ENTERED AT 16:57:50 ON 23 MAR 2005
L1             STRUCTURE UPLOADED
L2               2 S L1
L3             286 S L1 SSS FUL

     FILE 'CAPLUS' ENTERED AT 17:02:00 ON 23 MAR 2005
L4             109 S L3
L5             ANALYZE L4 1- RN HIT :     263 TERMS

     FILE 'REGISTRY' ENTERED AT 17:02:26 ON 23 MAR 2005
L6               3 S 191-28-6/RN OR 3779-11-1/RN OR 13225-81-5/RN
L7               STRUCTURE UPLOADED
L8               5 S L7
L9             568 S L7 SSS FUL

     FILE 'CAPLUS' ENTERED AT 17:07:30 ON 23 MAR 2005
L10            186 S L9

     FILE 'REGISTRY' ENTERED AT 17:07:42 ON 23 MAR 2005

     FILE 'CAPLUS' ENTERED AT 17:08:14 ON 23 MAR 2005
               S C16 H8 O4/MF

     FILE 'REGISTRY' ENTERED AT 17:08:33 ON 23 MAR 2005

     FILE 'CAPLUS' ENTERED AT 17:08:34 ON 23 MAR 2005

     FILE 'REGISTRY' ENTERED AT 17:08:46 ON 23 MAR 2005
L11             88 S  C16 H8 O4/MF
L12              1 S L11 AND L6
L13            565 S L9 NOT L6

     FILE 'CAPLUS' ENTERED AT 17:09:31 ON 23 MAR 2005
L14            144 S L13
L15            ANALYZE L14 1- RN HIT :     484 TERMS

     FILE 'REGISTRY' ENTERED AT 17:11:50 ON 23 MAR 2005
L16         164625 S 6-6-6-6/SZ
L17          12949 S 6-6-6-7/SZ
L18           1215 S 6-6-6-8/SZ
L19         178780 S L16 OR L17 OR L18
L20            294 S L9 AND L19
L21            274 S L9 NOT L20

     FILE 'CAPLUS' ENTERED AT 17:23:55 ON 23 MAR 2005
L22             58 S L20

=> d l7
L7 HAS NO ANSWERS
L7                 STR
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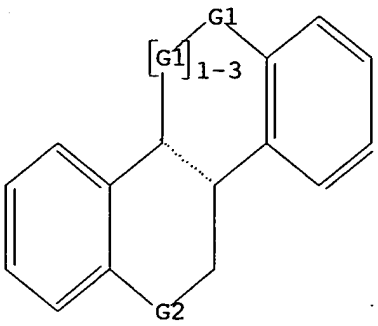


G1 O,S,C
G2 O,S

Structure attributes must be viewed using STN Express query preparation.

=> d ibib abs hitstr 1-58

appl

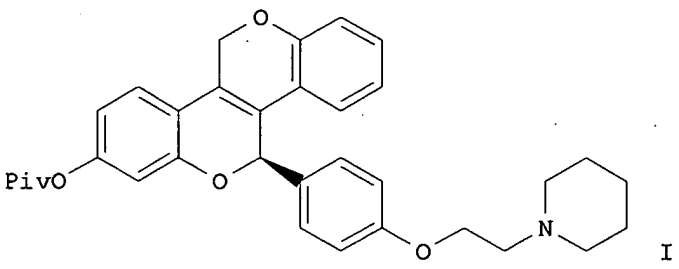
L22 ANSWER 1 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:1127099 CAPLUS
DOCUMENT NUMBER: 142:56279
TITLE: Preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs).
INVENTOR(S): Kanojia, Ramesh M.; Jain, Nareshkumar F.; Ng, Raymond; Sui, Zhihua; Xu, Jiayi
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 110 pp., Cont.-in-part of U.S. Ser. No. 307,735.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004259915	A1	20041223	US 2003-719875	20031121
US 2003216463	A1	20031120	US 2002-307735	20021202
WO 2004050660	A1	20040617	WO 2003-US37419	20031121

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2001-341957P P 20011219
US 2002-307735 A2 20021202

GI



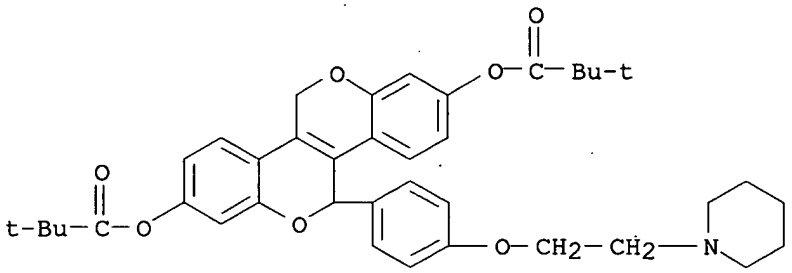
I

AB There are 5 claimed compds., e.g., I and over 100 synthetic examples of selective estrogen receptor modulators. Thus, 3-(2-hydroxy-4-methoxyphenyl)-7-hydroxy-4-methylchromen-2-one (preparation given), in methanol/acetone was added at room temperature anhydrous potassium carbonate; the solution was stirred 2 h to give 2,8-dihydroxy-1H-chromeno[4,3-c]chromen-5-one. The latter bound to estrogen α and β receptors at 0.505 μM and 0.061 μM, resp. I are useful in the treatment and/or prevention of disorders associated with the depletion of estrogen such as hot flashes, vaginal dryness, osteopenia and osteoporosis; hormone sensitive

cancers and hyperplasia of the breast, endometrium, cervix and prostate; endometriosis, uterine fibroids, osteoarthritis and as contraceptive agents, alone or in combination with a progestogen or progestogen antagonist.

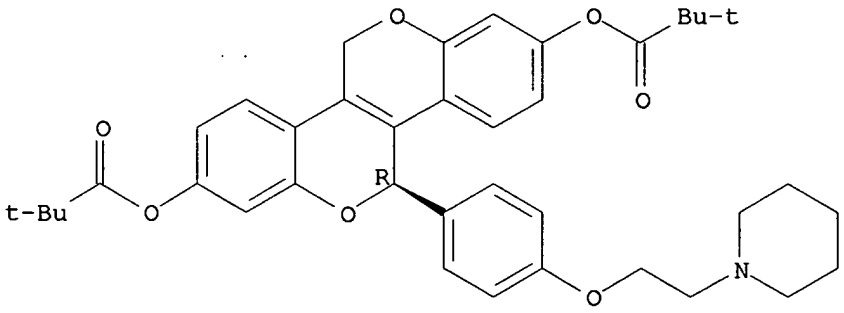
IT **554429-87-7P 554429-88-8P 554429-89-9P 554429-90-2P 554429-91-3P 554429-92-4P 554429-93-5P 554429-94-6P 554429-95-7P 554429-96-8P**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(claimed compound; preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs))

RN 554429-87-7 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)



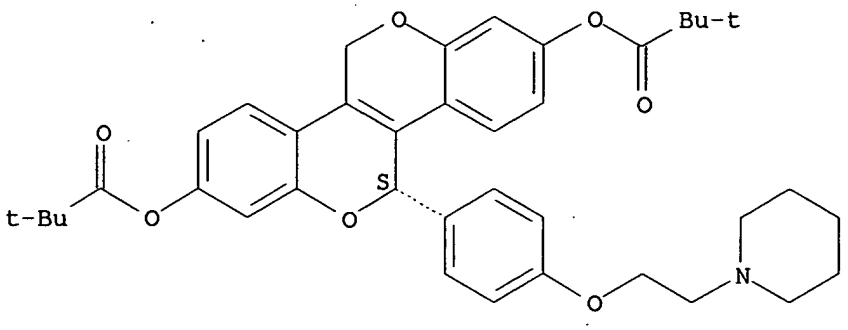
RN 554429-88-8 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5R)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

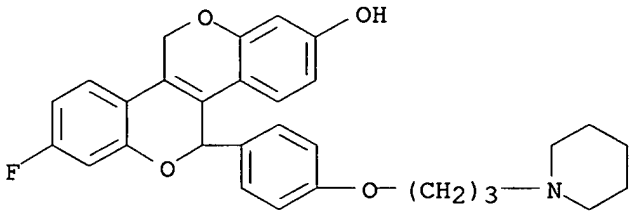


RN 554429-89-9 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5S)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)

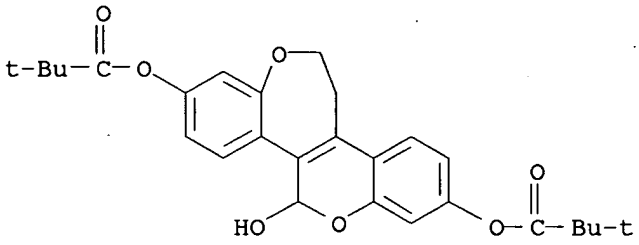
Absolute stereochemistry.



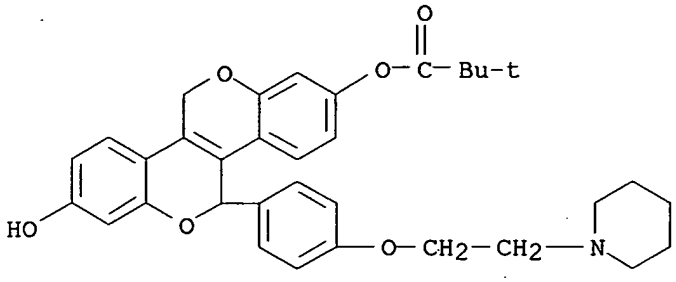
RN 554429-90-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 8-fluoro-5,11-dihydro-5-[4-[3-(1-piperidinyl)propoxy]phenyl]- (9CI) (CA INDEX NAME)



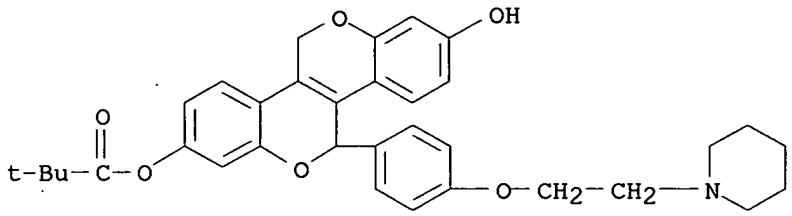
RN 554429-91-3 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 11,12-dihydro-5-hydroxy-5H-[1]benzopyrano[4,3-d][1]benzoxepin-2,8-diyl ester (9CI) (CA INDEX NAME)



RN 554429-92-4 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-8-hydroxy-5-[4-[3-(1-piperidinyl)propoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

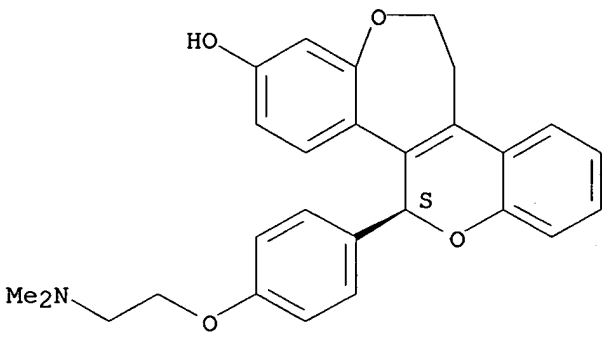


RN 554429-93-5 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-8-hydroxy-11-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

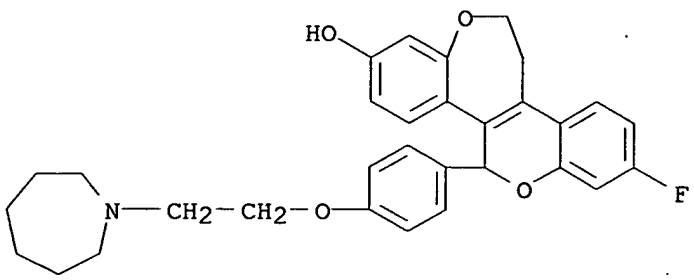


RN 554429-94-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

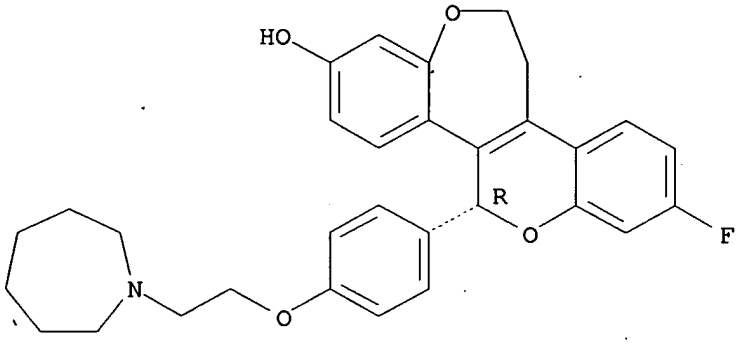


RN 554429-95-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 8-fluoro-5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



RN 554429-96-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 8-fluoro-5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



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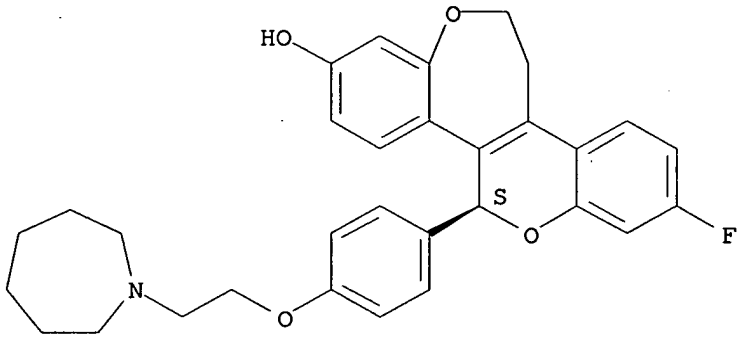
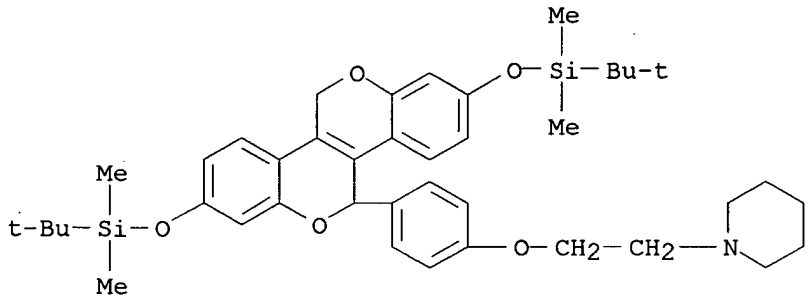
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs))

RN 554429-97-9 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 8-fluoro-5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

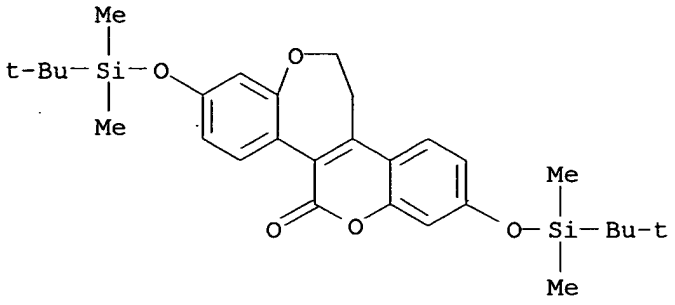
Absolute stereochemistry. Rotation (-).



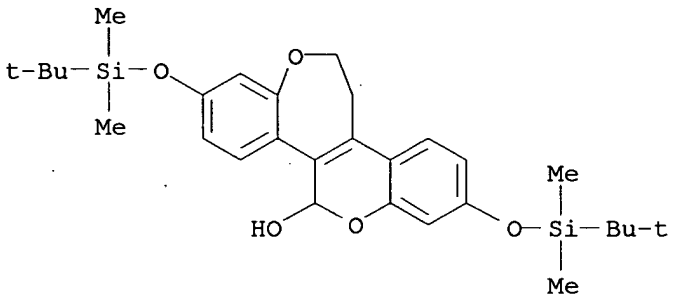
RN 554430-39-6 CAPLUS
CN Silane, [[5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



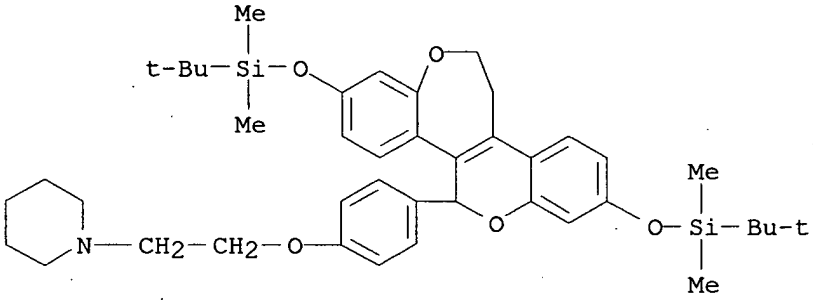
RN 554430-43-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



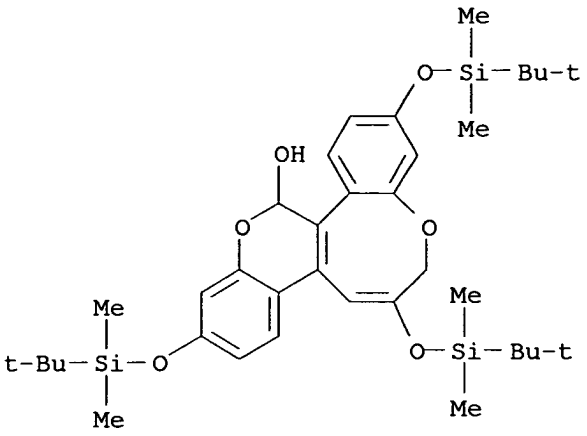
RN 554430-44-3 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



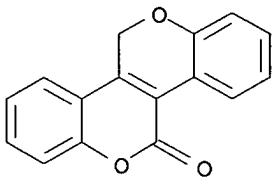
RN 554430-45-4 CAPLUS
CN Piperidine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



RN 554430-48-7 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13-ol, 2,6,10-tris[[(1,1-dimethylethyl)dimethylsilyl]oxy]-7,13-dihydro- (9CI) (CA INDEX NAME)



RN 554430-60-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one (9CI) (CA INDEX NAME)



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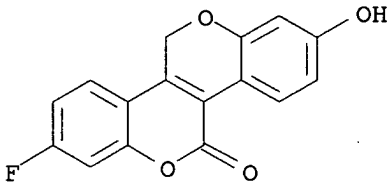
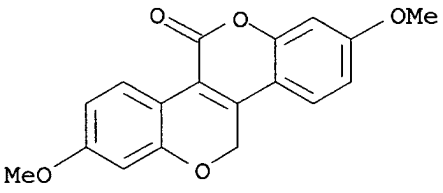
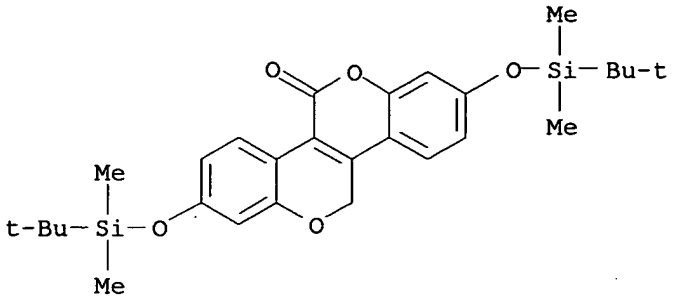
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 8-fluoro-2-hydroxy- (9CI) (CA INDEX NAME)



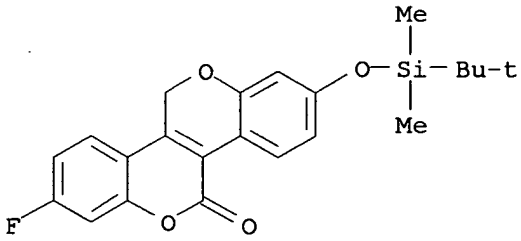
RN 554430-86-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2,8-dimethoxy- (9CI) (CA INDEX NAME)



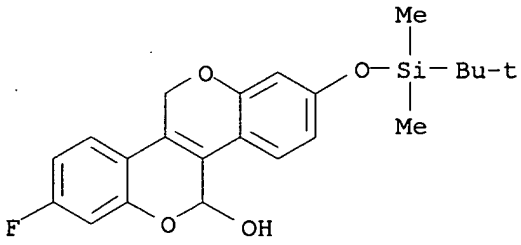
RN 554430-87-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



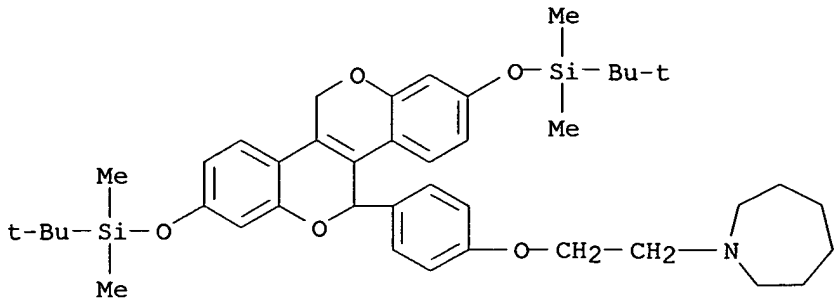
RN 554430-88-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro- (9CI) (CA INDEX NAME)



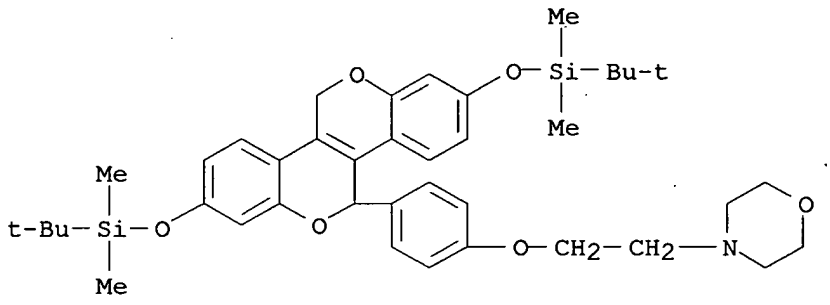
RN 554430-89-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro-5,11-dihydro- (9CI) (CA INDEX NAME)



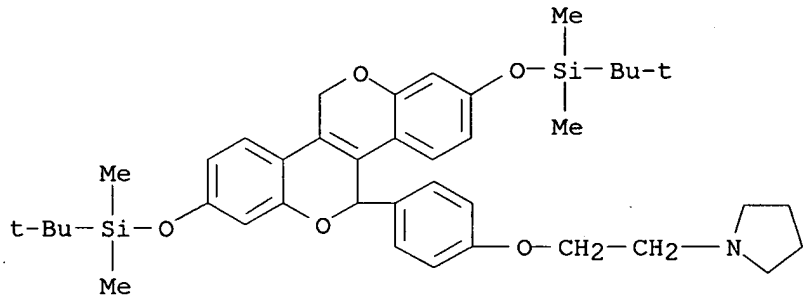
RN 554430-90-9 CAPLUS
CN 1H-Azepine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]hexahydro- (9CI) (CA INDEX NAME)



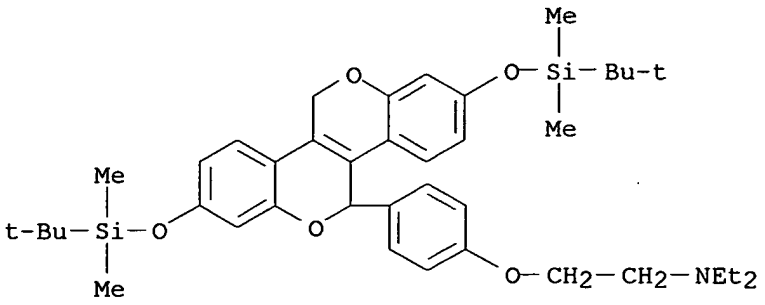
RN 554430-91-0 CAPLUS
CN Morpholine, 4-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



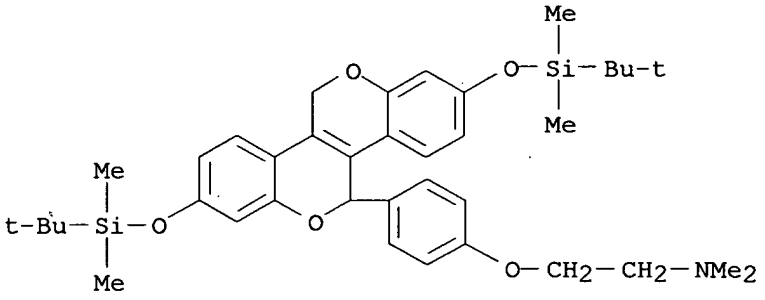
RN 554430-92-1 CAPLUS
CN Pyrrolidine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



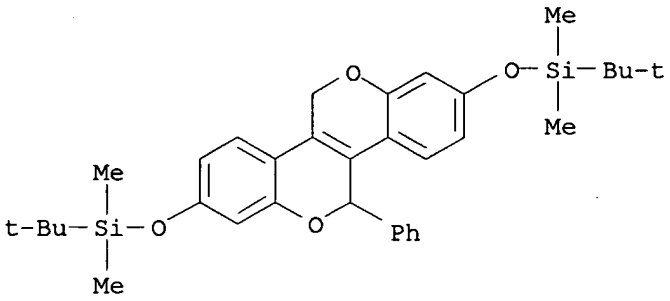
RN 554430-93-2 CAPLUS
CN Ethanamine, 2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]-N,N-diethyl- (9CI) (CA INDEX NAME)



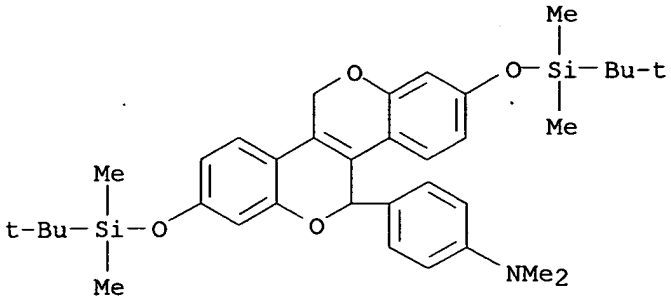
RN 554430-94-3 CAPLUS
CN Ethanamine, 2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)



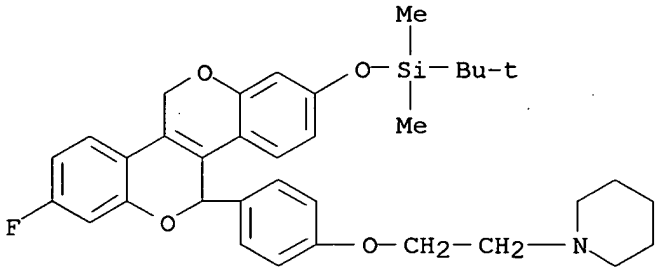
RN 554430-95-4 CAPLUS
CN Silane, [(5,11-dihydro-5-phenyl[1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl)bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



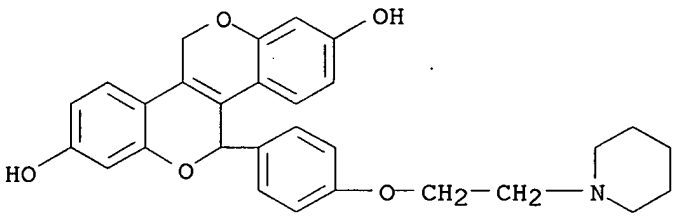
RN 554430-96-5 CAPLUS
CN Benzenamine, 4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



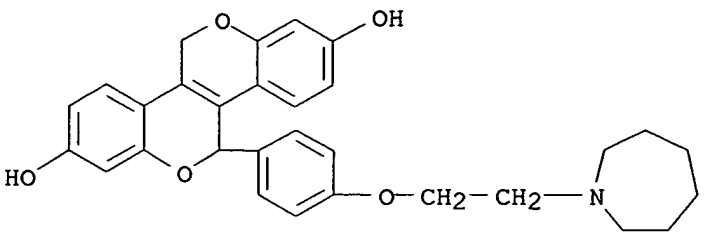
RN 554430-97-6 CAPLUS
CN Piperidine, 1-[2-[4-[2-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



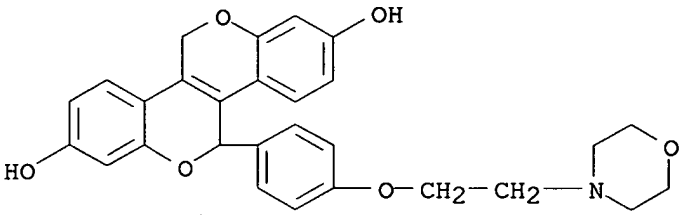
RN 554430-98-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



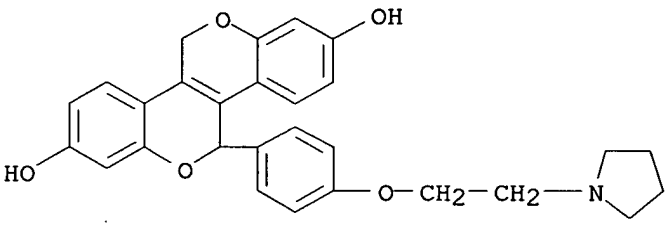
RN 554430-99-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-5,11-dihydro- (9CI) (CA INDEX NAME)



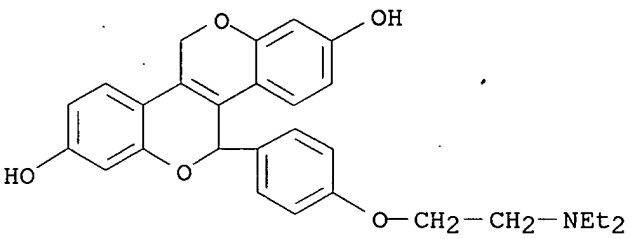
RN 554431-00-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(4-morpholinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



RN 554431-01-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

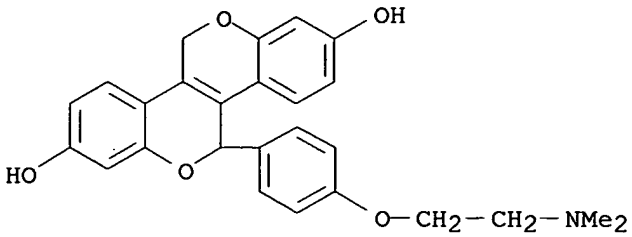


RN 554431-02-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-[2-(diethylamino)ethoxy]phenyl]-5,11-dihydro- (9CI) (CA INDEX NAME)

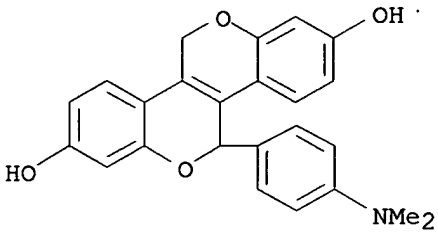


RN 554431-03-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-[2-

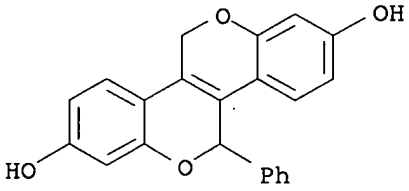
(dimethylamino)ethoxy]phenyl]-5,11-dihydro- (9CI) (CA INDEX NAME)



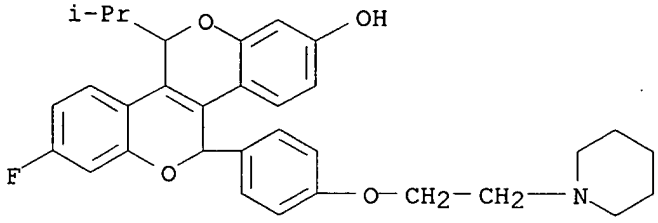
RN 554431-04-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-(dimethylamino)phenyl]-5,11-dihydro- (9CI) (CA INDEX NAME)



RN 554431-05-9 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-phenyl- (9CI) (CA INDEX NAME)

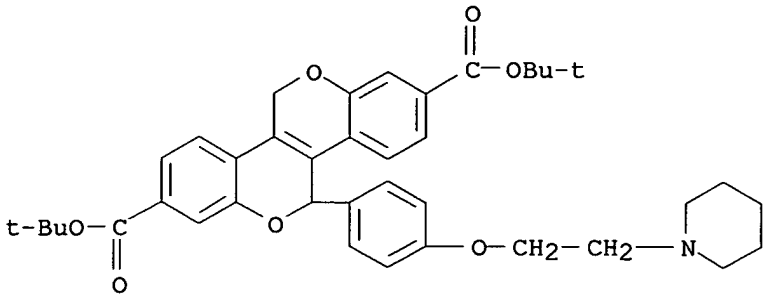


RN 554431-06-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 8-fluoro-5,11-dihydro-11-(1-methylethyl)-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

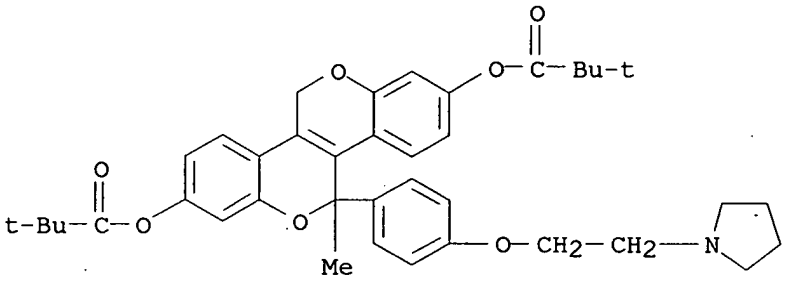


RN 554431-07-1 CAPLUS

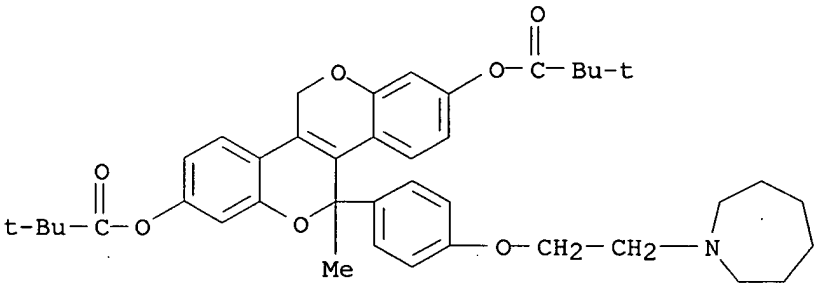
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-dicarboxylic acid, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



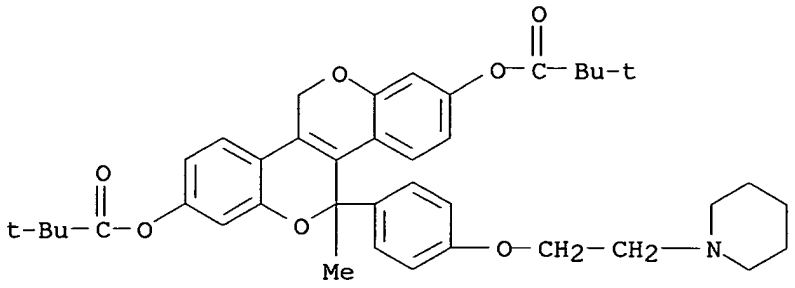
RN 554431-08-2 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-methyl-5-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)



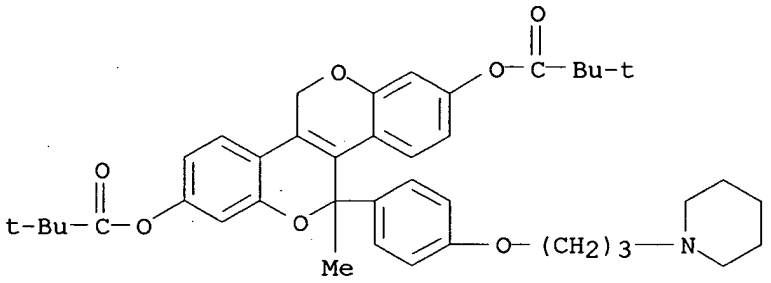
RN 554431-09-3 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-5,11-dihydro-5-methyl[1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)



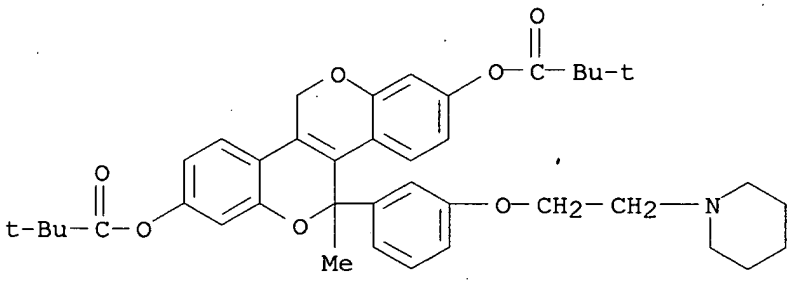
RN 554431-10-6 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-methyl-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)



RN 554431-11-7 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-methyl-5-[4-[3-(1-piperidinyl)propoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)

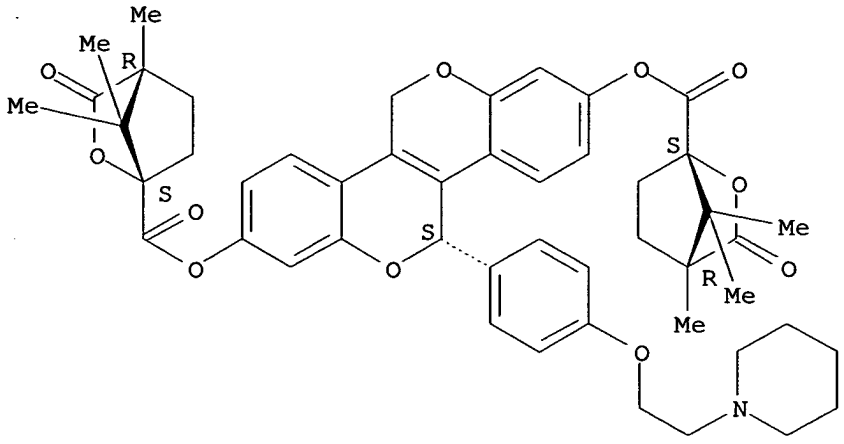


RN 554431-12-8 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-methyl-5-[3-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)

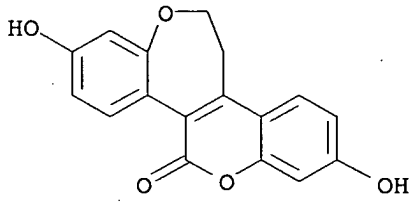


RN 554431-13-9 CAPLUS
CN 2-Oxabicyclo[2.2.1]heptane-1-carboxylic acid, 4,7,7-trimethyl-3-oxo-, (5S)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester, (1S,1'S,4R,4'R)- (9CI) (CA INDEX NAME)

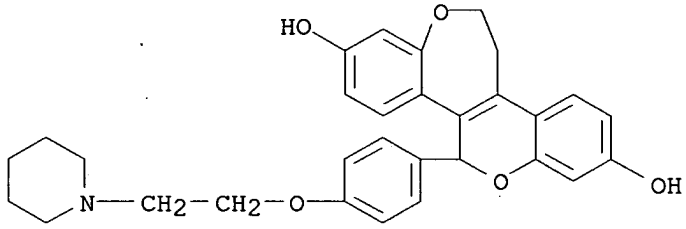
Absolute stereochemistry. Rotation (-).



RN 554431-14-0 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 11,12-dihydro-2,8-dihydroxy- (9CI) (CA INDEX NAME)

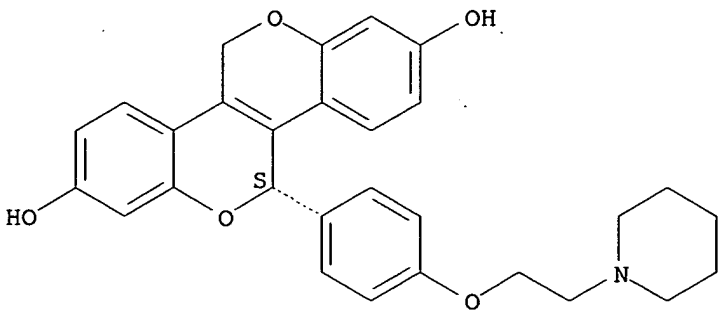


RN 554431-15-1 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 11,12-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



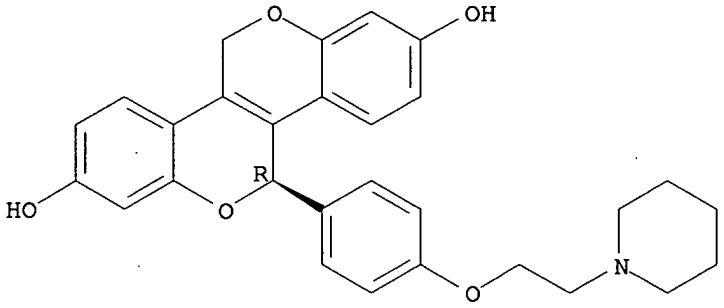
RN 554431-16-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

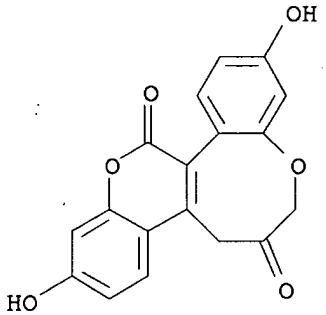


RN 554431-17-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5R)- (9CI) (CA INDEX NAME)

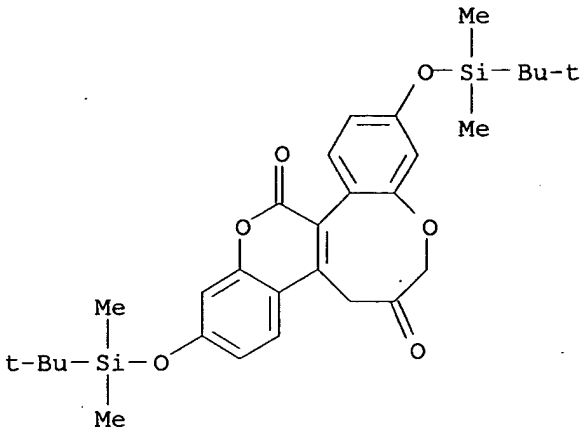
Absolute stereochemistry. Rotation (+).



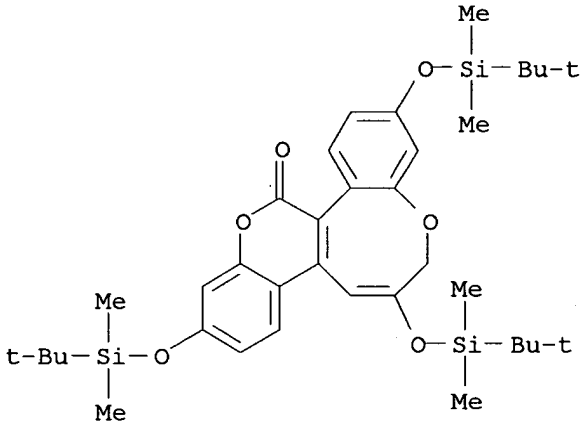
RN 554431-18-4 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-6,13(5H,7H)-dione, 2,10-dihydroxy- (9CI) (CA INDEX NAME)



RN 554431-19-5 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-6,13(5H,7H)-dione, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



RN 554431-20-8 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13(7H)-one, 2,6,10-tris[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



RN 554431-21-9 CAPLUS
CN Piperidine, 1-[2-[4-[2,6,10-tris[[(1,1-dimethylethyl)dimethylsilyl]oxy]-7,13-dihydro[1]benzopyrano[4,3-e][1]benzoxocin-13-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

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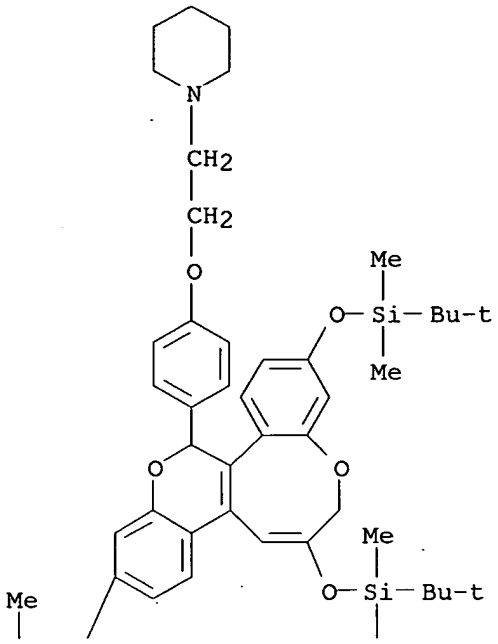

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RN 554431-22-0 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-6(7H)-one, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,13-dihydro-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

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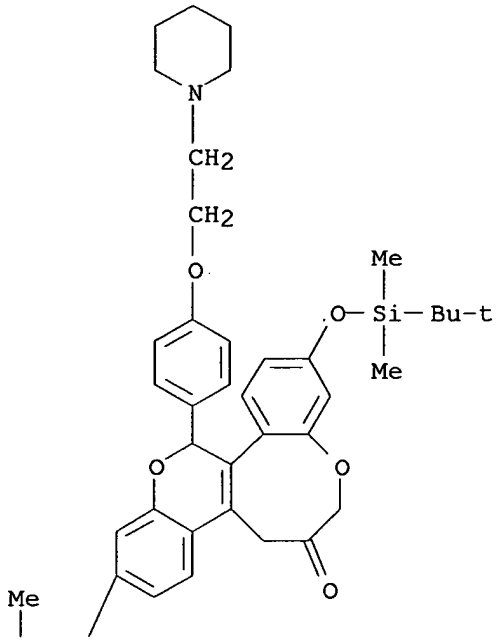

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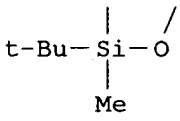
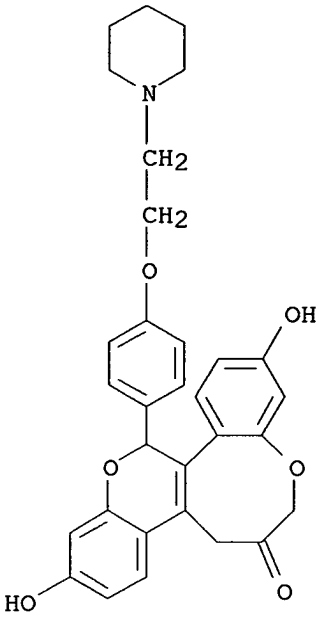
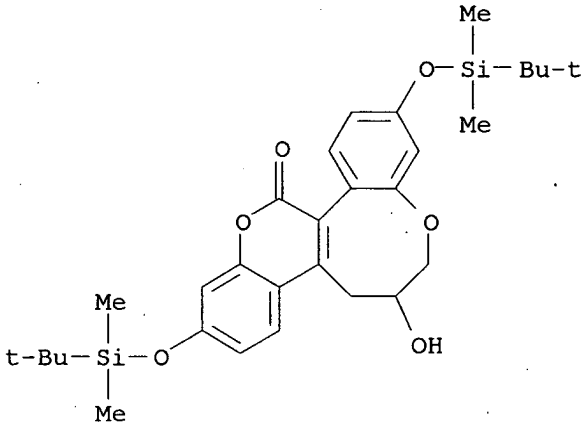


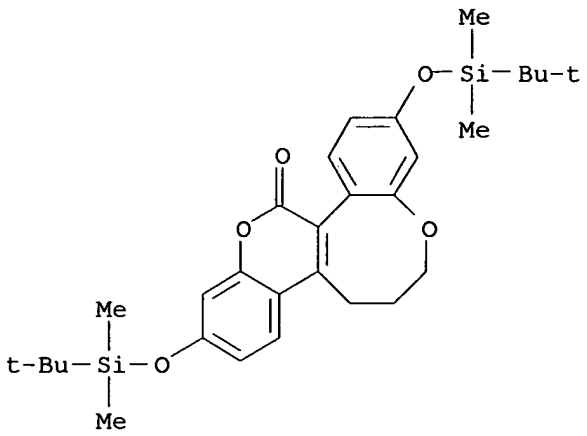
RN 554431-23-1 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-6(7H)-one, 5,13-dihydro-2,10-dihydroxy-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



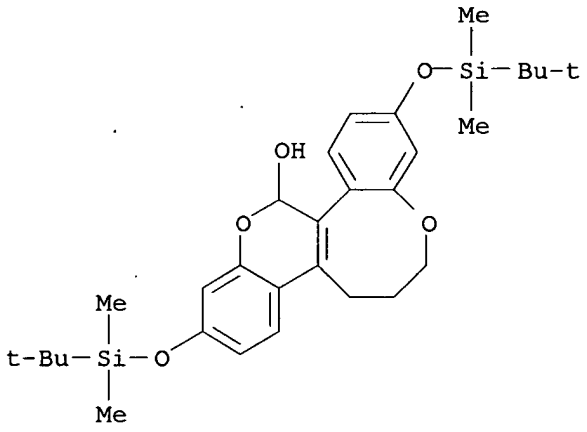
RN 554431-24-2 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13(5H)-one, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6,7-dihydro-6-hydroxy- (9CI) (CA INDEX NAME)



RN 554431-25-3 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13(5H)-one, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6,7-dihydro- (9CI) (CA INDEX NAME)



RN 554431-26-4 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13-ol, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,6,7,13-tetrahydro- (9CI) (CA INDEX NAME)



RN 554431-27-5 CAPLUS
CN Piperidine, 1-[2-[4-[2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,6,7,13-tetrahydro[1]benzopyrano[4,3-e][1]benzoxocin-13-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

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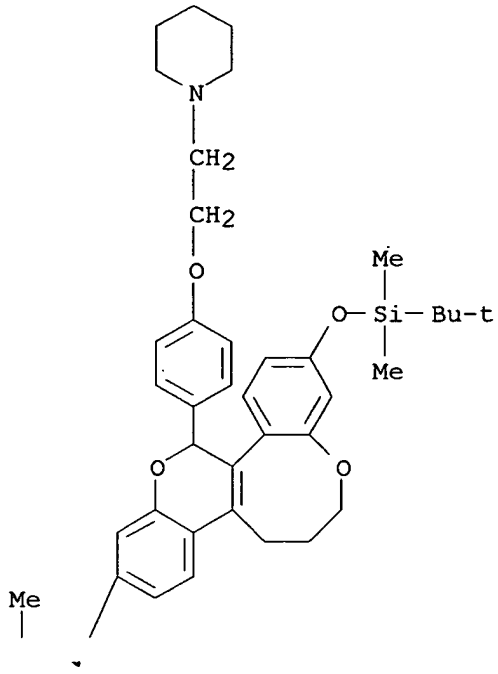

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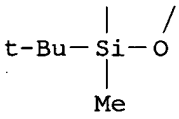
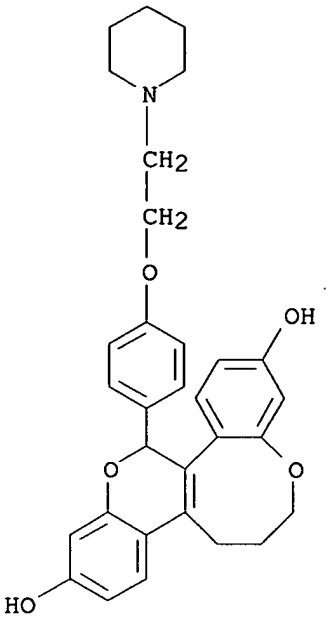
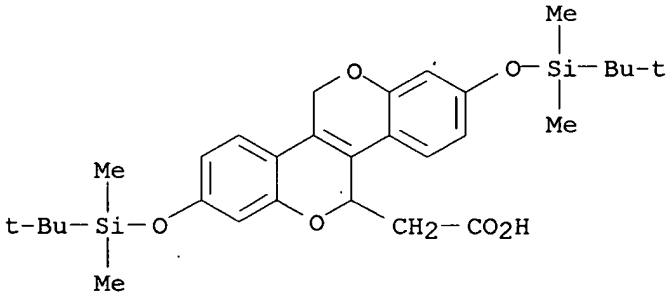


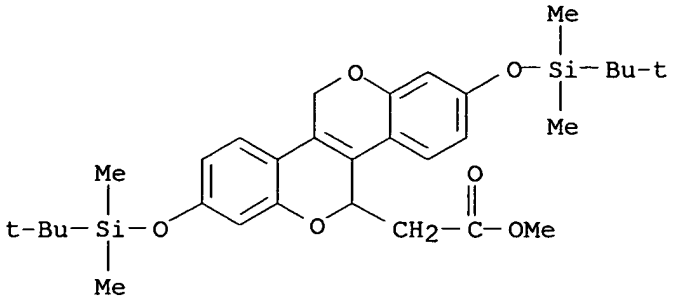
RN 554431-28-6 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-2,10-diol, 5,6,7,13-tetrahydro-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



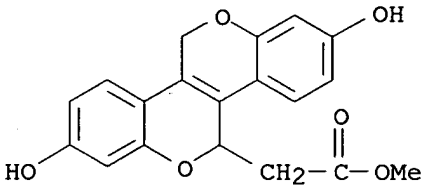
RN 554431-29-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro- (9CI) (CA INDEX NAME)



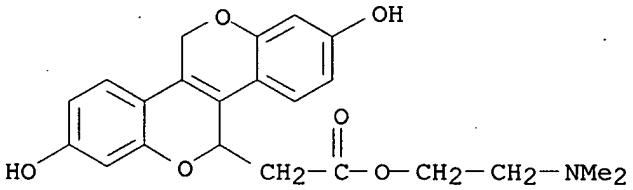
RN 554431-30-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro-, methyl ester (9CI) (CA INDEX NAME)



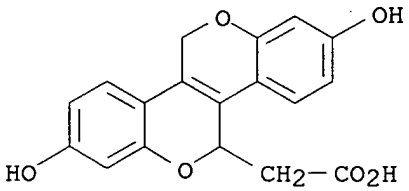
RN 554431-31-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 5,11-dihydro-2,8-dihydroxy-, methyl ester (9CI) (CA INDEX NAME)



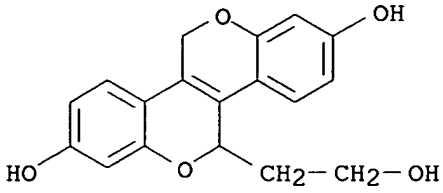
RN 554431-32-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 5,11-dihydro-2,8-dihydroxy-, 2-(dimethylamino)ethyl ester (9CI) (CA INDEX NAME)



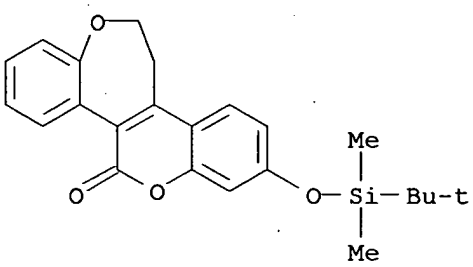
RN 554431-33-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 5,11-dihydro-2,8-dihydroxy- (9CI) (CA INDEX NAME)



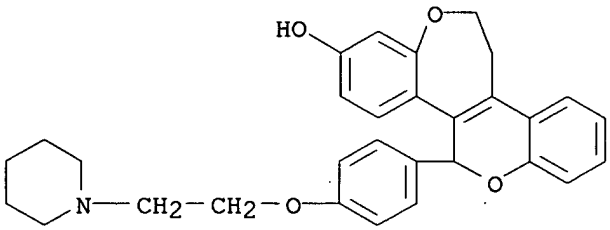
RN 554431-34-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-(2-hydroxyethyl)- (9CI) (CA INDEX NAME)



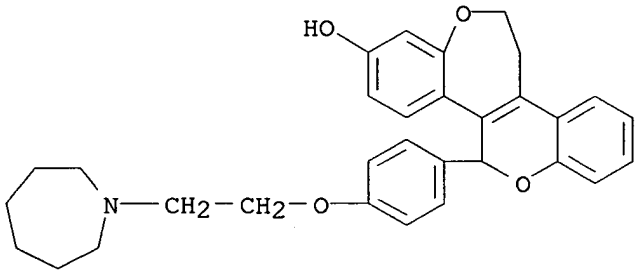
RN 554431-35-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 8-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



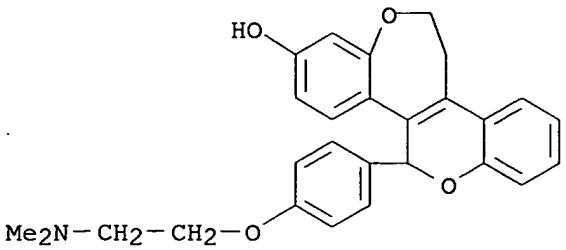
RN 554431-36-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 11,12-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



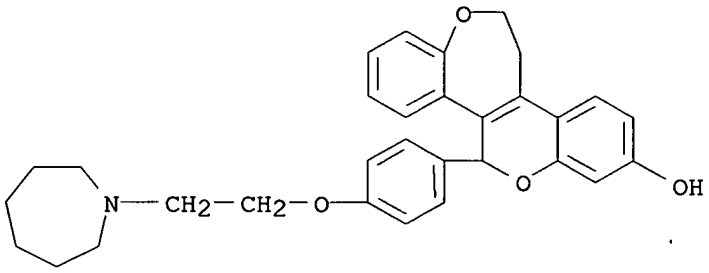
RN 554431-37-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



RN 554431-38-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)

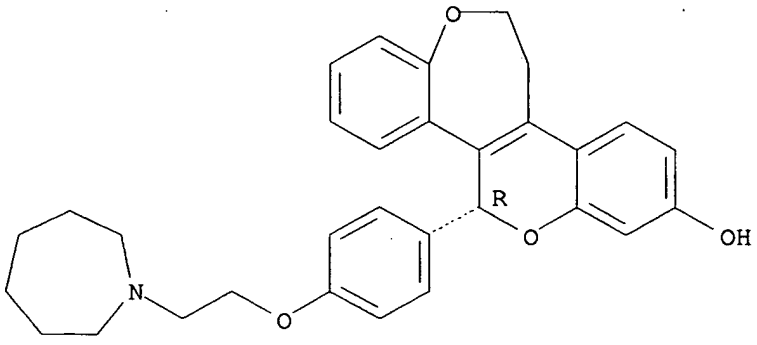


RN 554431-39-9 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



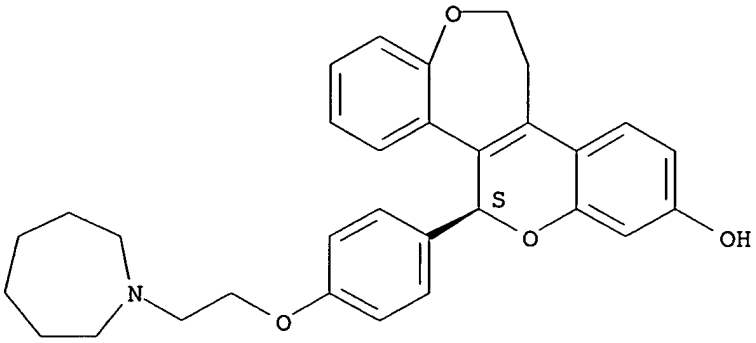
RN 554431-40-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

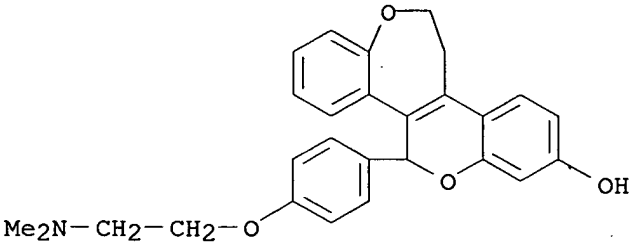


RN 554431-41-3 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

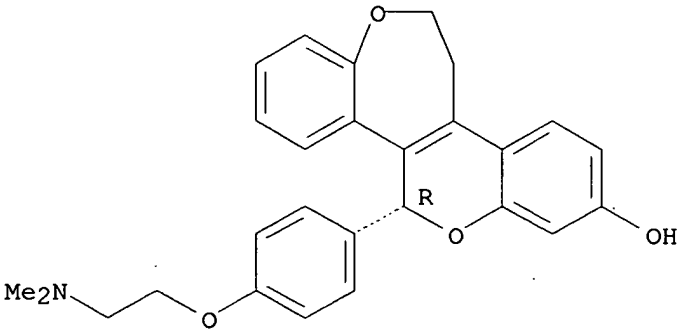


RN 554431-42-4 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



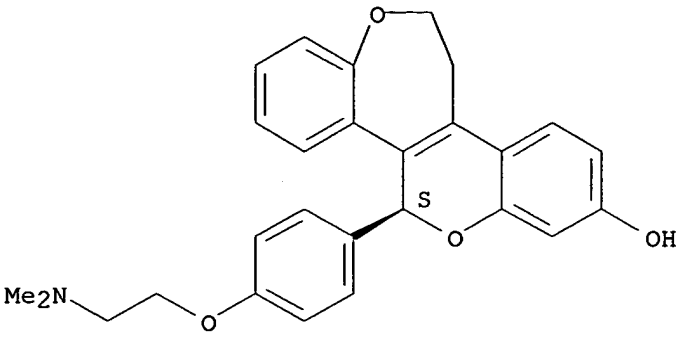
RN 554431-43-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

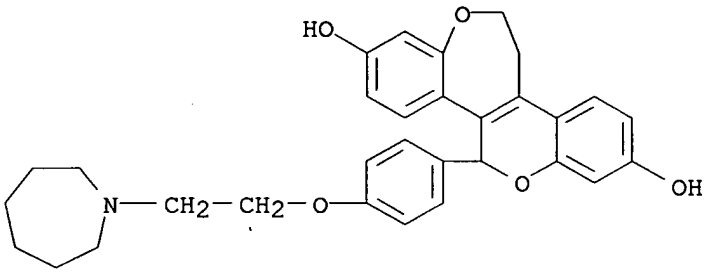


RN 554431-44-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

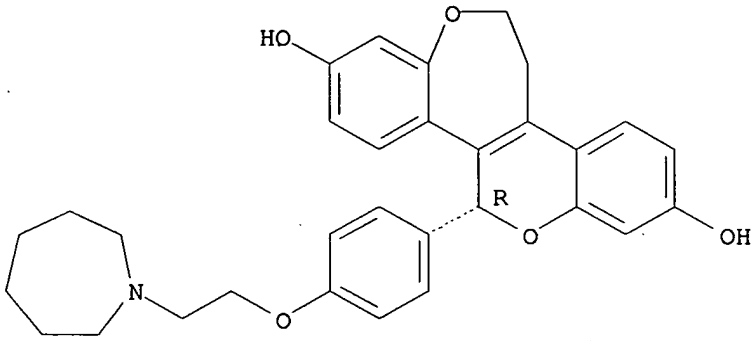


RN 554431-45-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



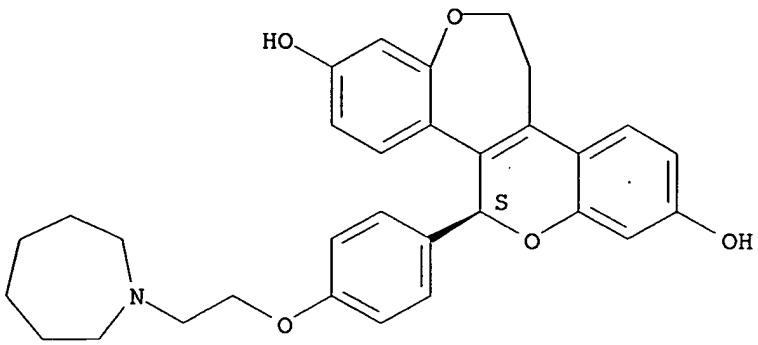
RN 554431-46-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

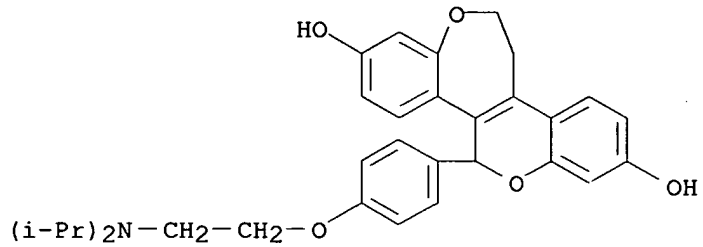


RN 554431-47-9 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

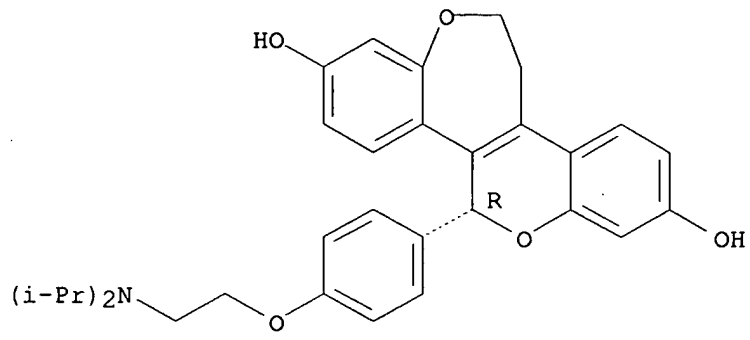


RN 554431-48-0 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-[bis(1-methylethyl)amino]ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



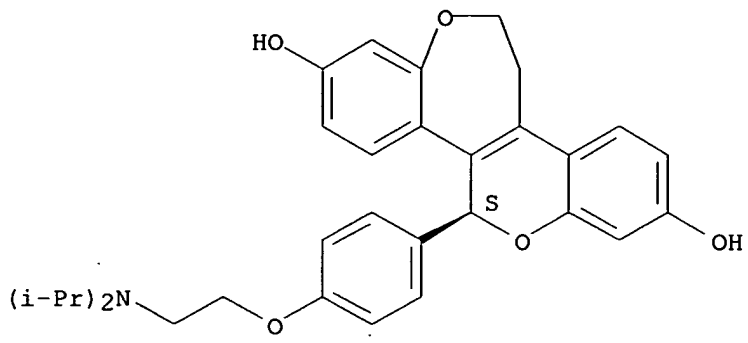
RN 554431-49-1 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-[bis(1-methylethyl)amino]ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

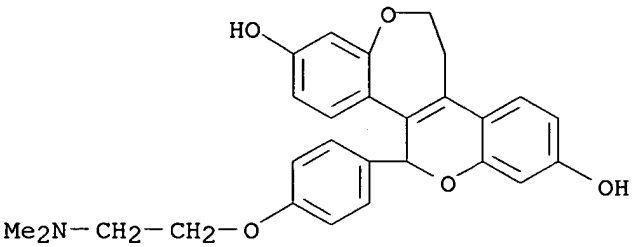


RN 554431-50-4 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-[bis(1-methylethyl)amino]ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

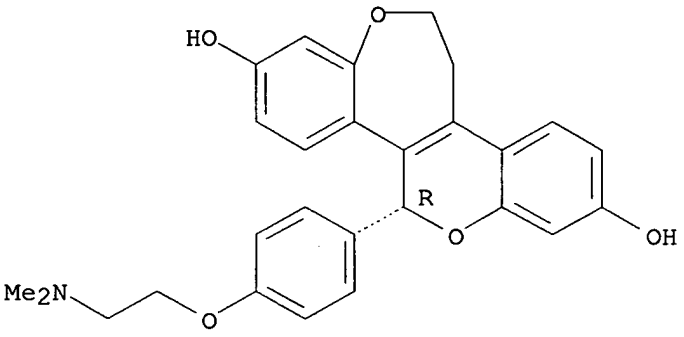


RN 554431-51-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



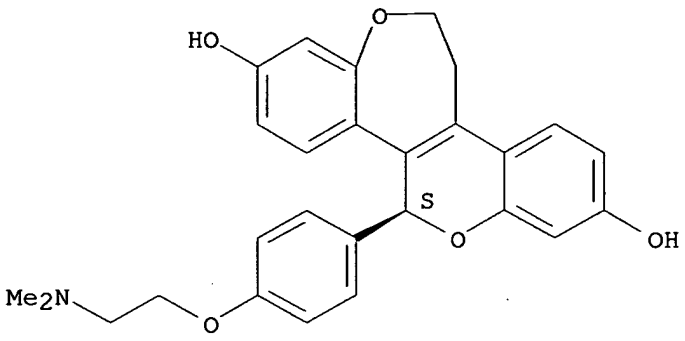
RN 554431-52-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

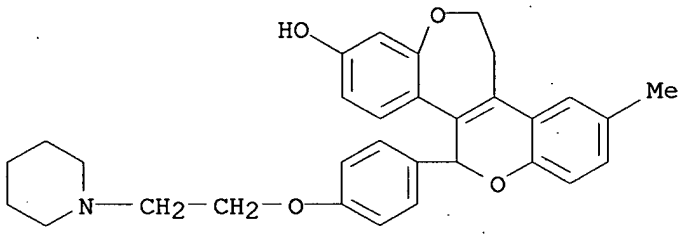


RN 554431-53-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

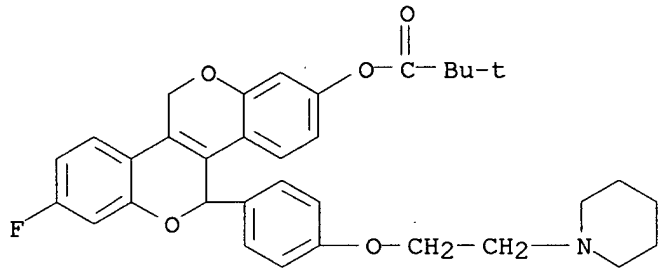
Absolute stereochemistry. Rotation (-).



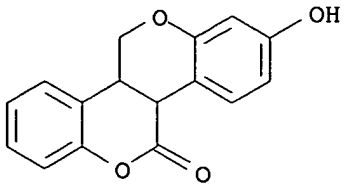
RN 554431-54-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 11,12-dihydro-9-methyl-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



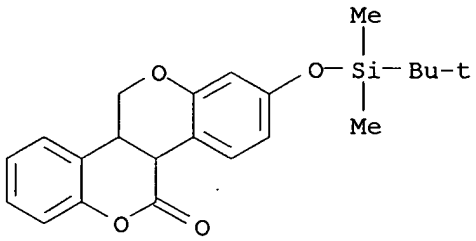
RN 554431-55-9 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 8-fluoro-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)



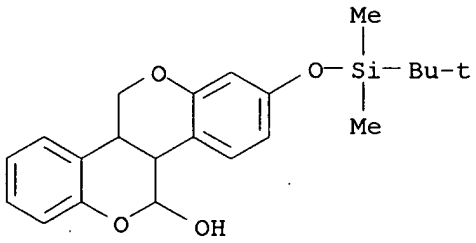
RN 554431-56-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(4bH)-one, 10b,11-dihydro-2-hydroxy- (9CI) (CA INDEX NAME)



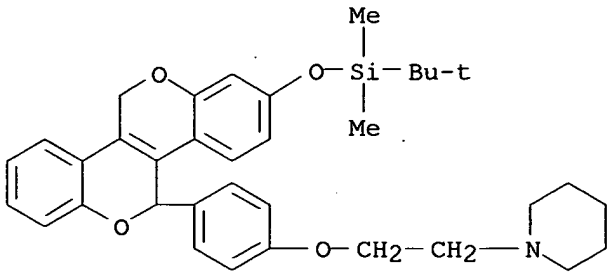
RN 554431-57-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(4bH)-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-10b,11-dihydro- (9CI) (CA INDEX NAME)



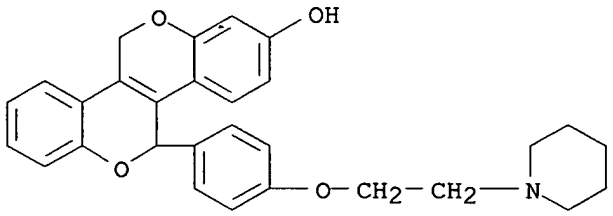
RN 554431-58-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-4b,5,10b,11-tetrahydro- (9CI) (CA INDEX NAME)



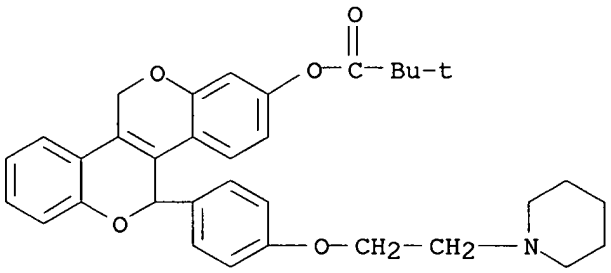
RN 554431-59-3 CAPLUS
CN Piperidine, 1-[2-[4-[2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



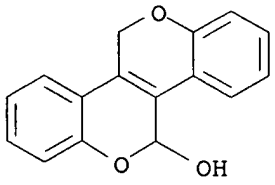
RN 554431-60-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



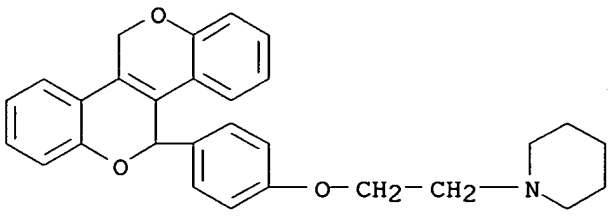
RN 554431-61-7 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)



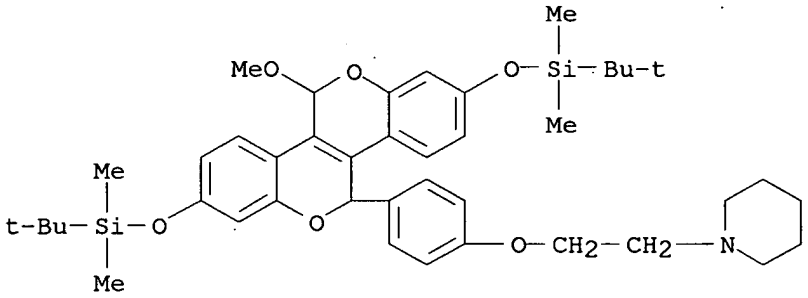
RN 554431-62-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ol, 5,11-dihydro- (9CI) (CA INDEX NAME)



RN 554431-63-9 CAPLUS
CN Piperidine, 1-[2-[4-(5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl)phenoxy]ethyl]- (9CI) (CA INDEX NAME)

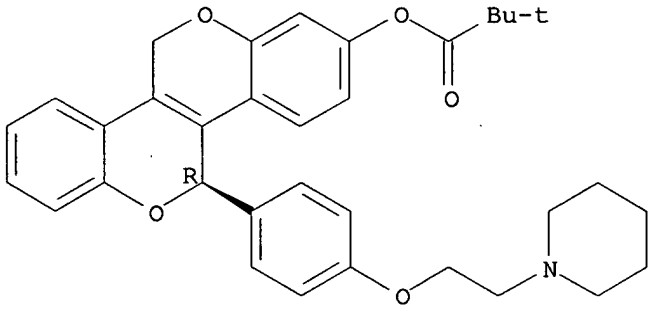


RN 554431-64-0 CAPLUS
CN Piperidine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro-11-methoxy[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



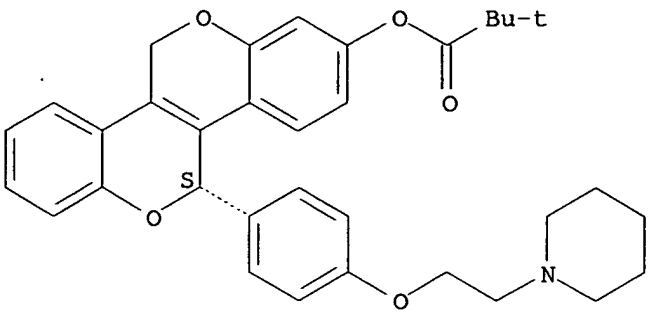
RN 554431-65-1 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5R)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



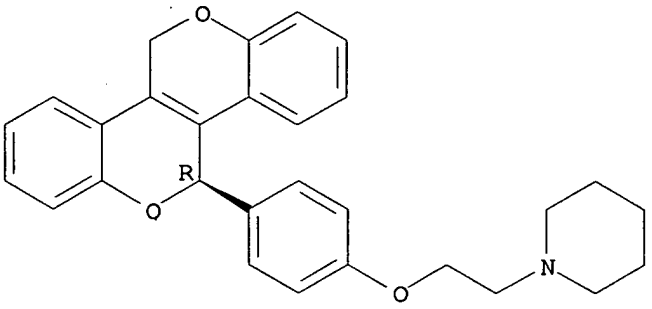
RN 554431-66-2 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5S)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

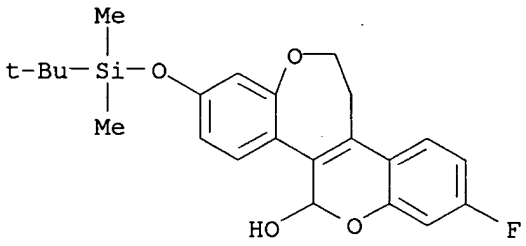


RN 554431-67-3 CAPLUS
CN Piperidine, 1-[2-[4-[(5R)-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

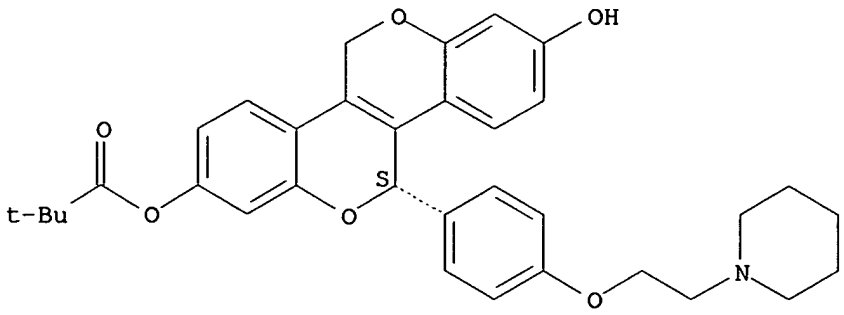


RN 554431-68-4 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro-11,12-dihydro- (9CI) (CA INDEX NAME)



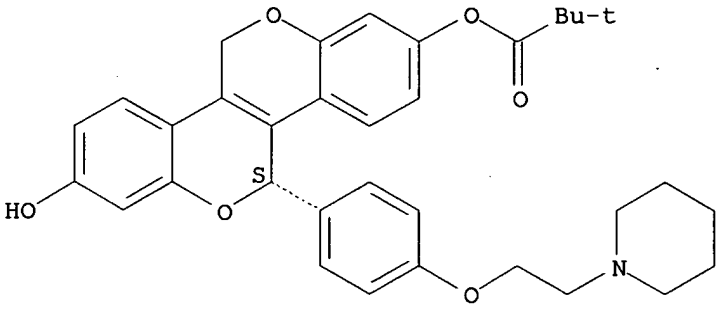
RN 554431-69-5 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (11S)-5,11-dihydro-8-hydroxy-11-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



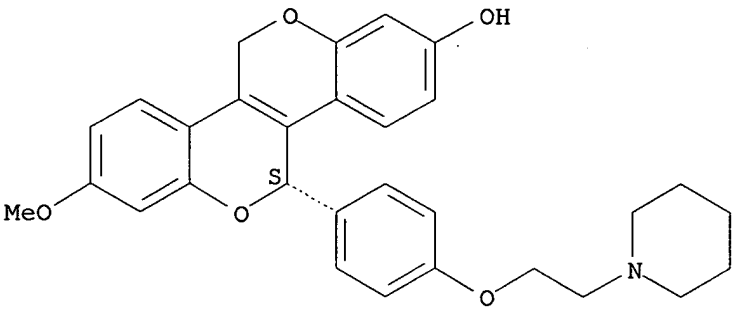
RN 554431-70-8 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5S)-5,11-dihydro-8-hydroxy-5-[4-[3-(1-piperidinyl)propoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



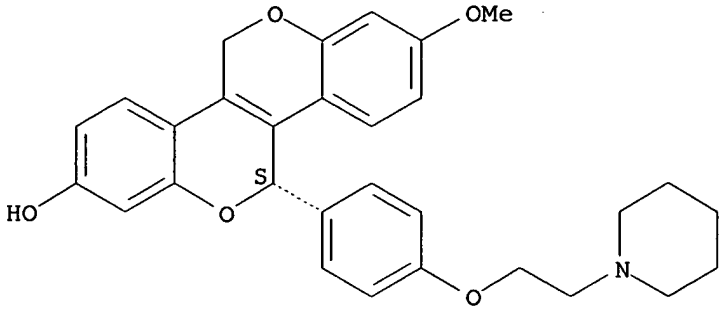
RN 554431-71-9 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 5,11-dihydro-8-methoxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



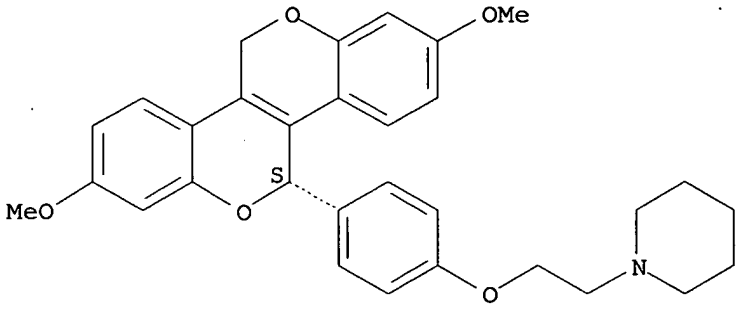
RN 554431-72-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 5,11-dihydro-8-methoxy-11-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (11S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



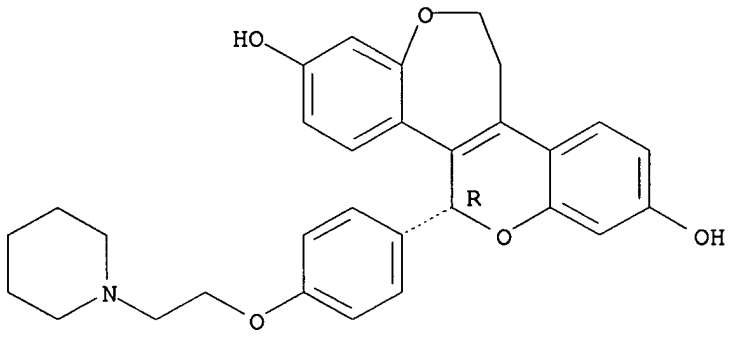
RN 554431-73-1 CAPLUS
CN Piperidine, 1-[2-[4-[(5S)-5,11-dihydro-2,8-dimethoxy[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



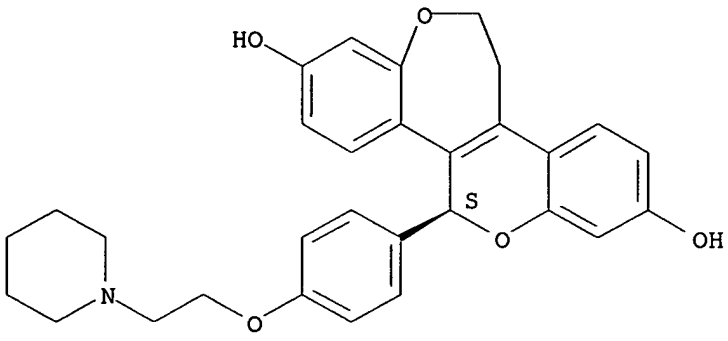
RN 554431-74-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 11,12-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



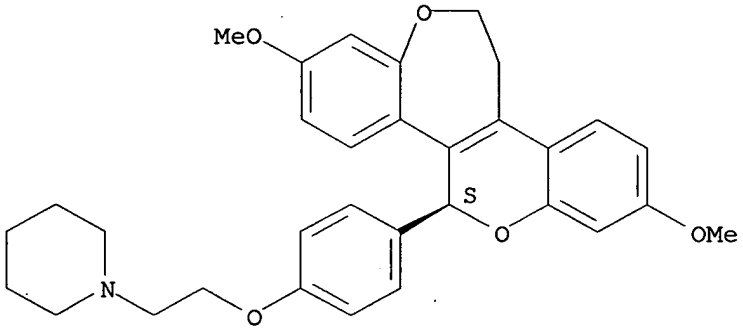
RN 554431-75-3 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 11,12-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



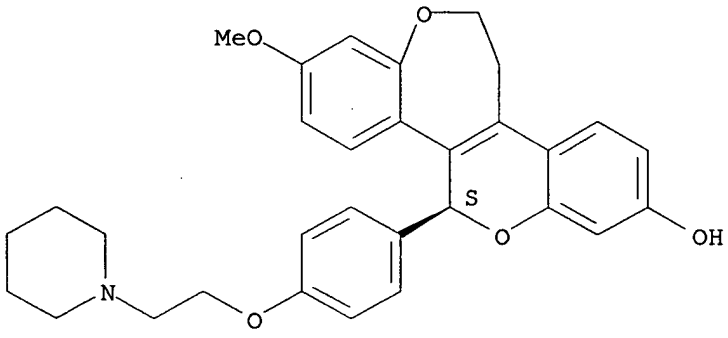
RN 554431-76-4 CAPLUS
CN Piperidine, 1-[2-[4-[(5S)-11,12-dihydro-2,8-dimethoxy-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



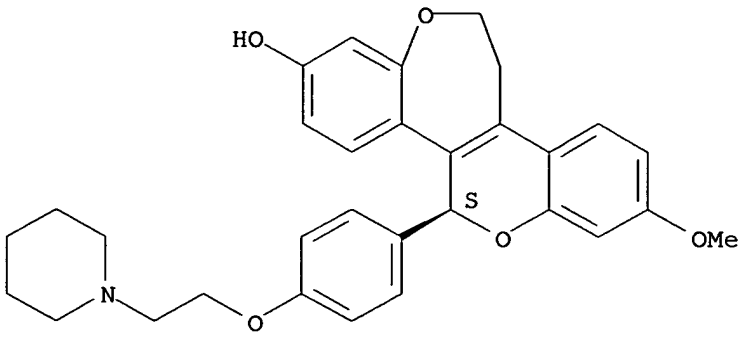
RN 554431-77-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 11,12-dihydro-2-methoxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

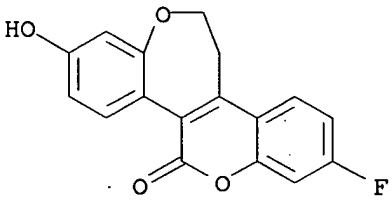


RN 554431-78-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 11,12-dihydro-8-methoxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

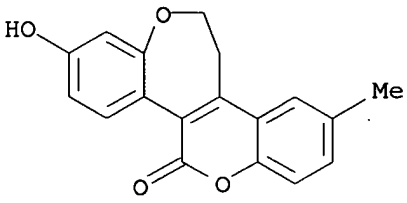
Absolute stereochemistry. Rotation (-).



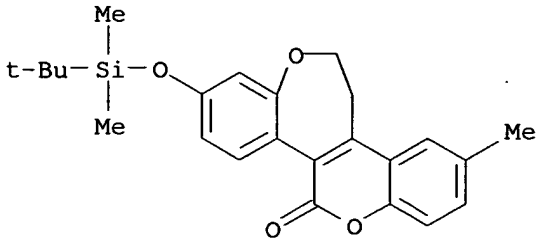
RN 554431-79-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 8-fluoro-11,12-dihydro-2-hydroxy- (9CI) (CA INDEX NAME)



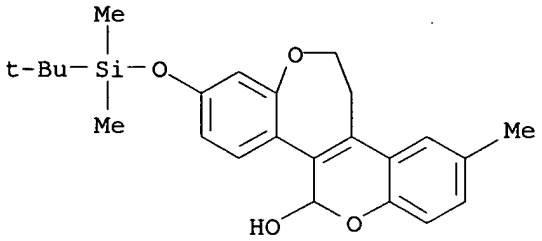
RN 554431-80-0 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 11,12-dihydro-2-hydroxy-9-methyl- (9CI) (CA INDEX NAME)



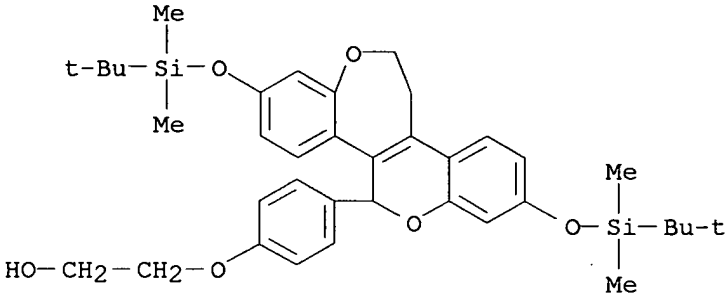
RN 554431-81-1 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-9-methyl- (9CI) (CA INDEX NAME)



RN 554431-82-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-9-methyl- (9CI) (CA INDEX NAME)

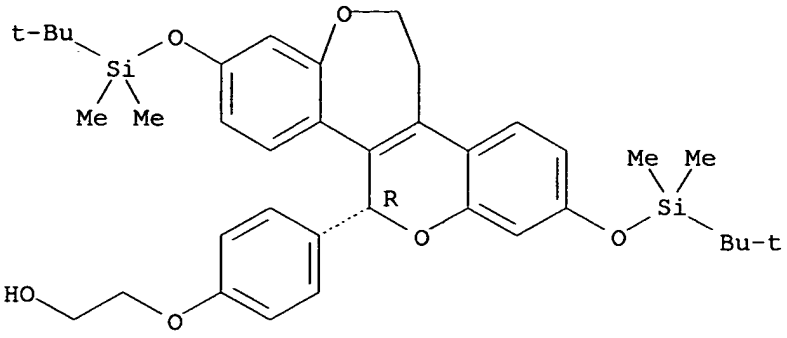


RN 554431-83-3 CAPLUS
CN Ethanol, 2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)



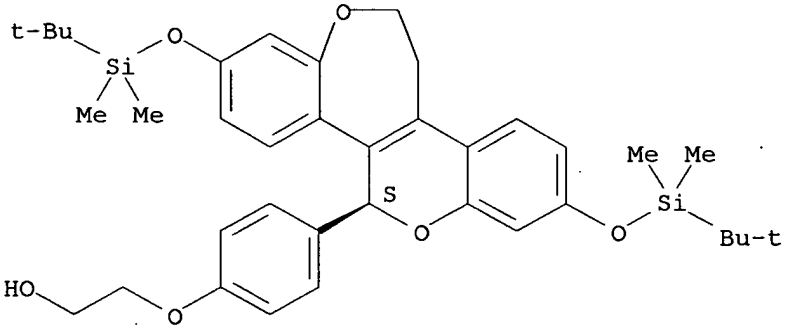
RN 554431-84-4 CAPLUS
CN Ethanol, 2-[4-[(5R)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



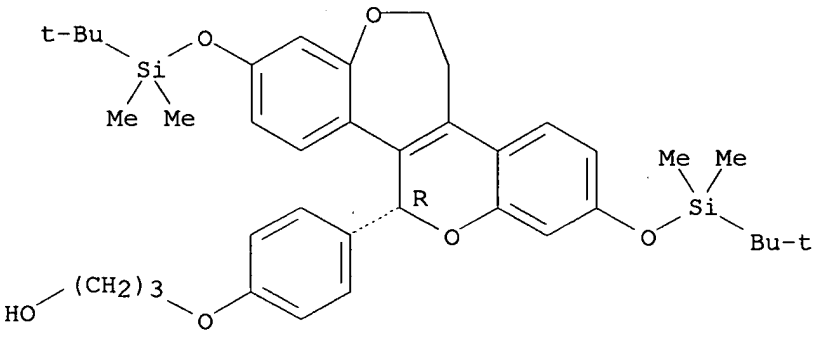
RN 554431-85-5 CAPLUS
CN Ethanol, 2-[4-[(5S)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 554431-86-6 CAPLUS
CN 1-Propanol, 3-[4-[(5R)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

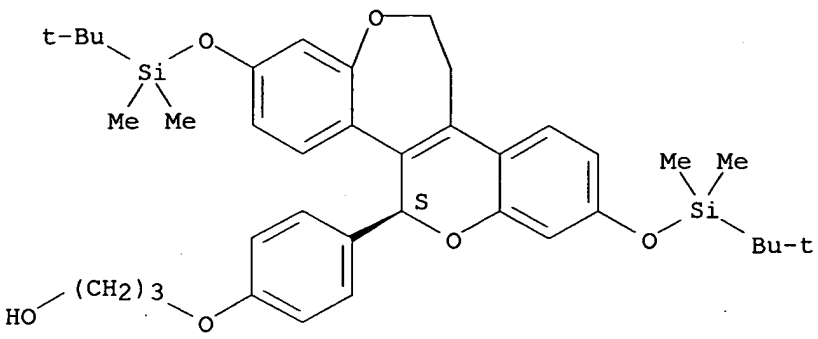
Absolute stereochemistry. Rotation (+).



RN 554431-87-7 CAPLUS

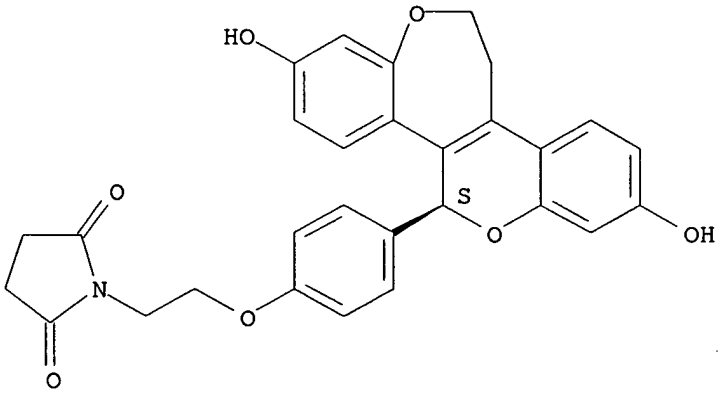
CN 1-Propanol, 3-[4-[(5S)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



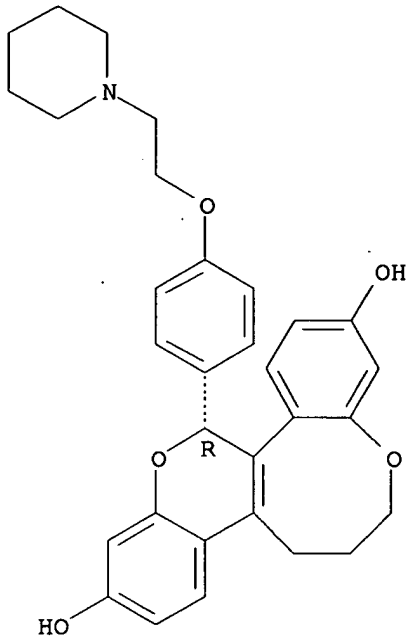
RN 554431-88-8 CAPLUS
CN 2,5-Pyrrolidinedione, 1-[2-[4-[(5S)-11,12-dihydro-2,8-dihydroxy-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



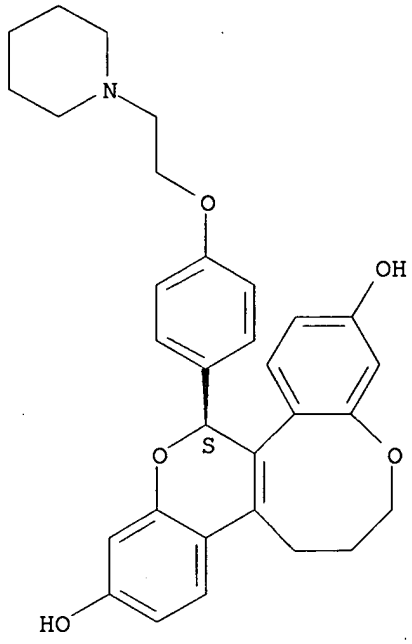
RN 554431-92-4 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-2,10-diol, 5,6,7,13-tetrahydro-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (13R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



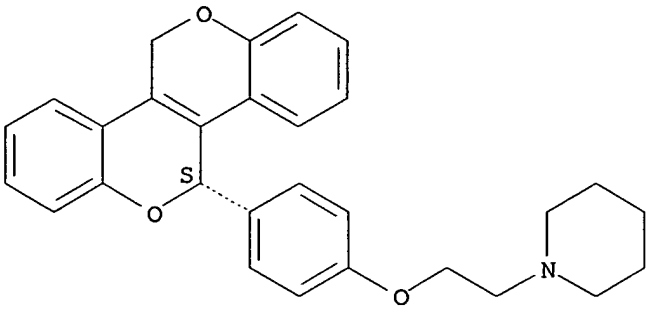
RN 554431-93-5 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-2,10-diol, 5,6,7,13-tetrahydro-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (13S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

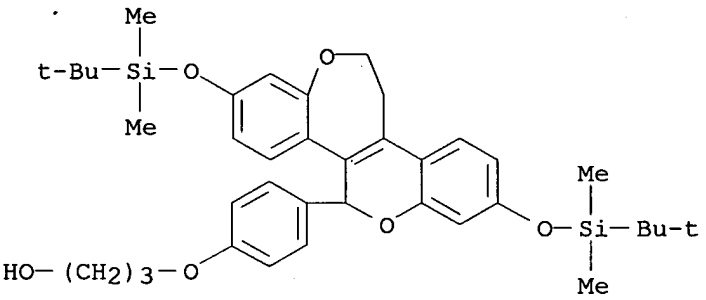


RN 554433-05-5 CAPLUS
CN Piperidine, 1-[2-[4-[(5S)-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

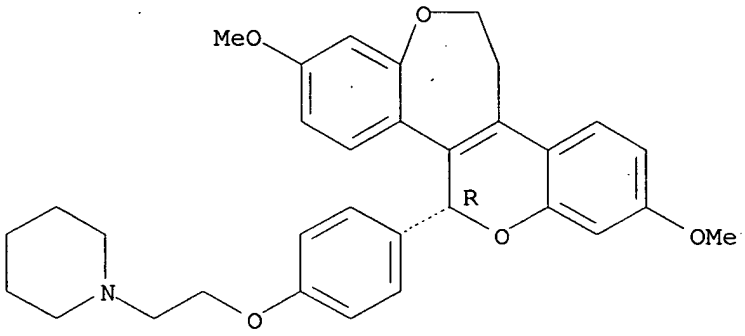


RN 554433-06-6 CAPLUS
CN 1-Propanol, 3-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)



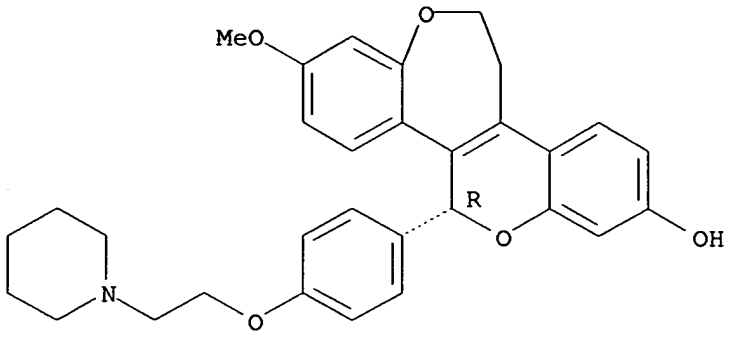
RN 810668-60-1 CAPLUS
CN Piperidine, 1-[2-[4-[(12R)-5,12-dihydro-2,9-dimethoxy-6H-[1]benzopyrano[4,3-d][1]benzoxepin-12-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



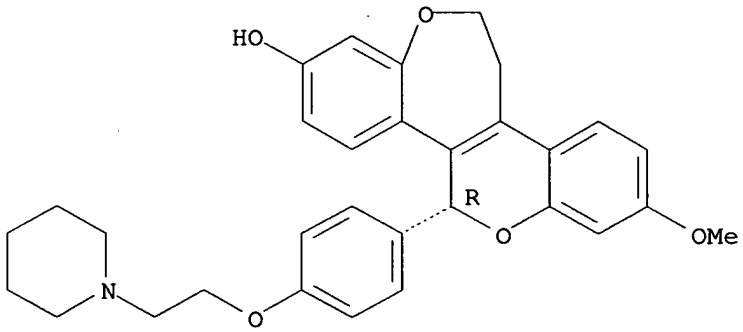
RN 810668-61-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 11,12-dihydro-2-methoxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



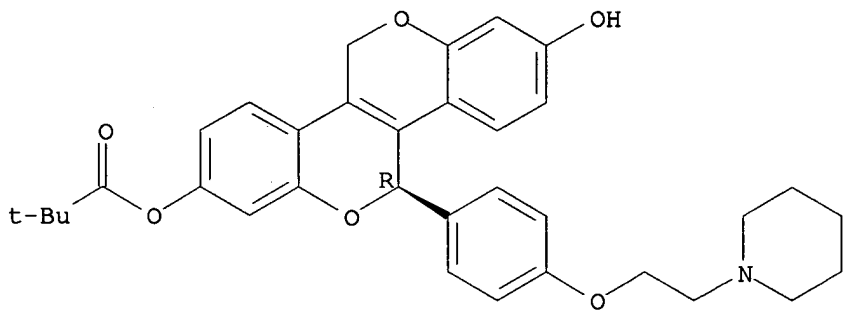
RN 810668-62-3 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 11,12-dihydro-8-methoxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 810668-63-4 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (11R)-5,11-dihydro-8-hydroxy-11-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

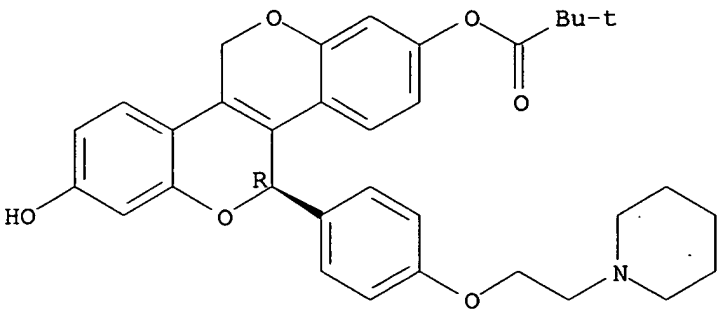
Absolute stereochemistry. Rotation (-).



RN 810668-64-5 CAPLUS

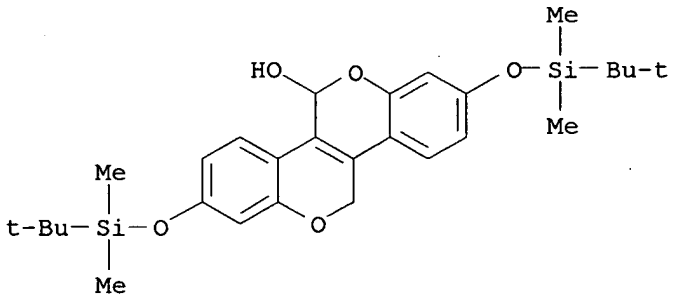
CN Propanoic acid, 2,2-dimethyl-, (5R)-5,11-dihydro-8-hydroxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

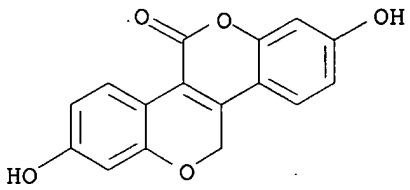


IT **553681-47-3 554430-69-2 554430-70-5**
554430-71-6 554430-72-7 554430-73-8
554430-74-9 554430-75-0 554430-77-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs))

RN 553681-47-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro- (9CI) (CA INDEX NAME)

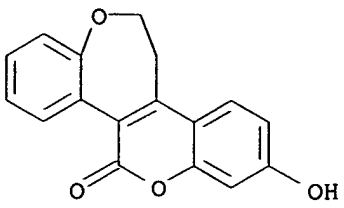


RN 554430-69-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2,8-dihydroxy- (9CI) (CA INDEX NAME)

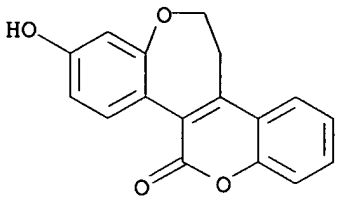


RN 554430-70-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 11,12-dihydro-8-hydroxy-

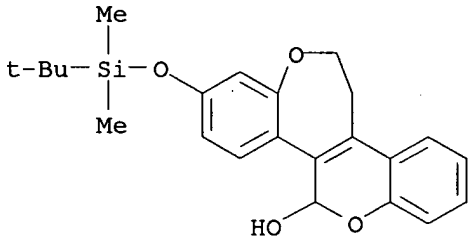
(9CI) (CA INDEX NAME)



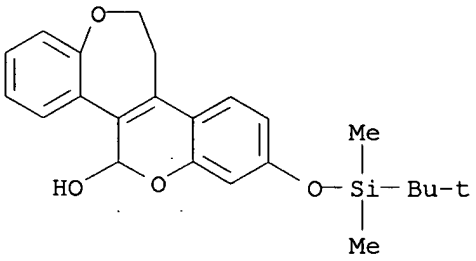
RN 554430-71-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 11,12-dihydro-2-hydroxy-
(9CI) (CA INDEX NAME)



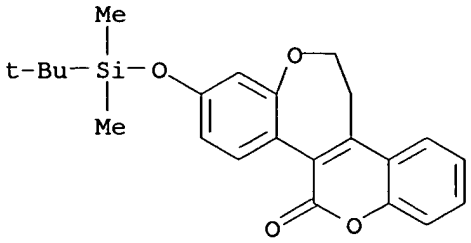
RN 554430-72-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 2-[[(1,1-
dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



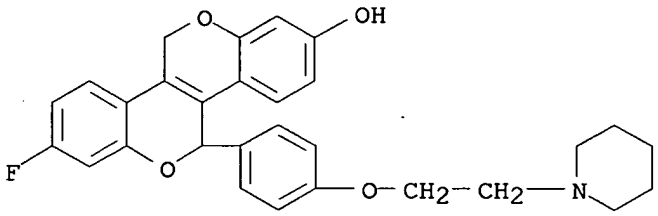
RN 554430-73-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 8-[[(1,1-
dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



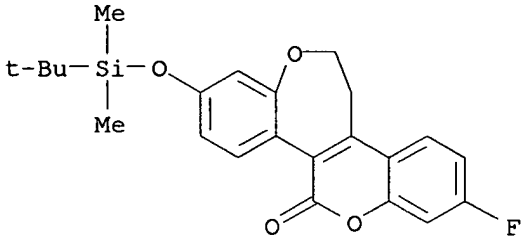
RN 554430-74-9 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



RN 554430-75-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 8-fluoro-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

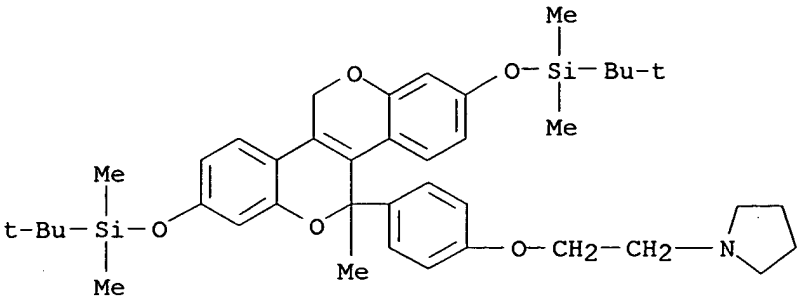


RN 554430-77-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro-11,12-dihydro- (9CI) (CA INDEX NAME)

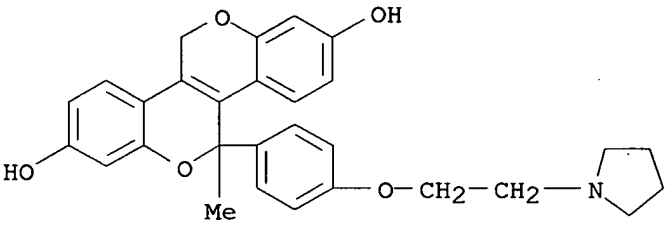


IT **554430-22-7P 554430-23-8P 554430-25-0P**
554430-26-1P 554430-28-3P 554430-29-4P
554430-31-8P 554430-32-9P 554430-34-1P
554430-35-2P 554430-50-1P 554430-51-2P
554430-52-3P 554431-90-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs))
RN 554430-22-7 CAPLUS

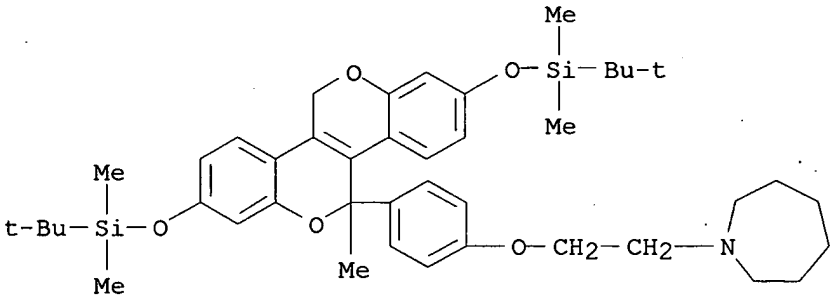
CN Silane, [[5,11-dihydro-5-methyl-5-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



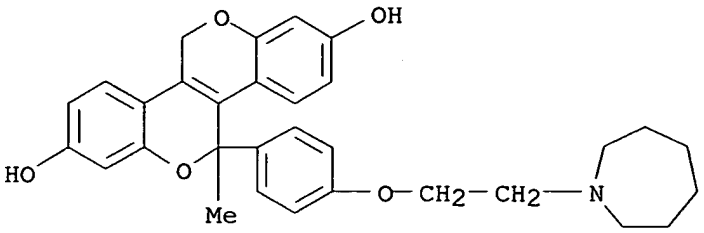
RN 554430-23-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-methyl-5-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



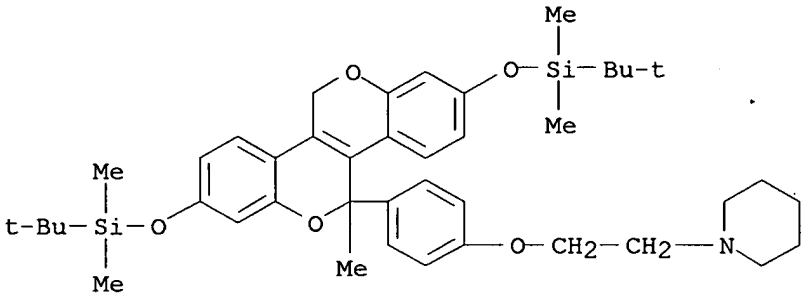
RN 554430-25-0 CAPLUS
CN Silane, [[5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-5,11-dihydro-5-methyl[1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



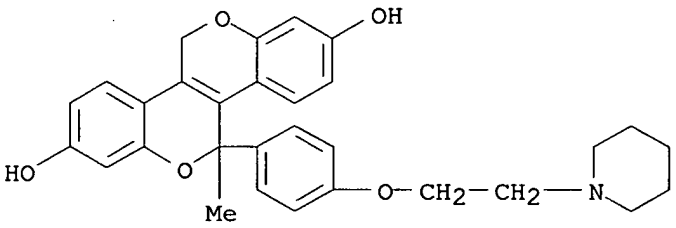
RN 554430-26-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-5,11-dihydro-5-methyl- (9CI) (CA INDEX NAME)



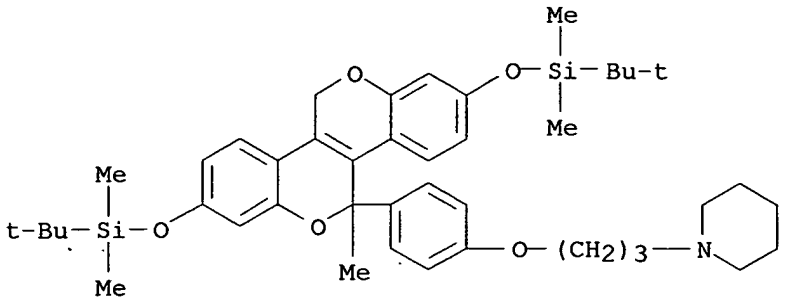
RN 554430-28-3 CAPLUS
CN Silane, [[5,11-dihydro-5-methyl-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



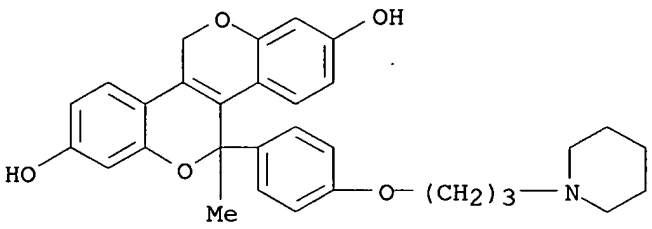
RN 554430-29-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-methyl-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



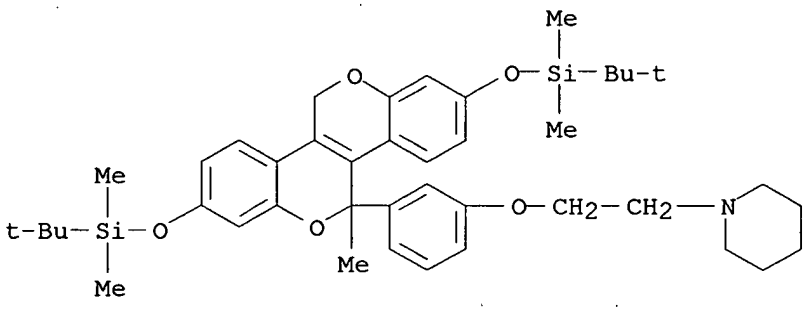
RN 554430-31-8 CAPLUS
CN Silane, [[5,11-dihydro-5-methyl-5-[4-[3-(1-piperidinyl)propoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



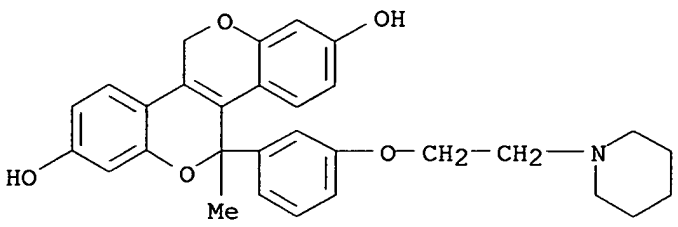
RN 554430-32-9 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-methyl-5-[4-[3-(1-piperidinyl)propoxy]phenyl]- (9CI) (CA INDEX NAME)



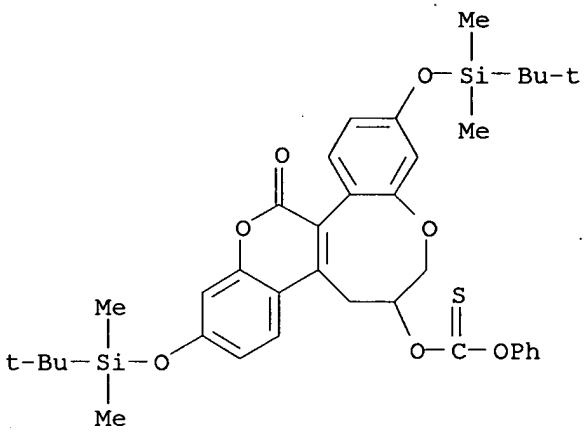
RN 554430-34-1 CAPLUS
CN Piperidine, 1-[2-[3-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro-5-methyl[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



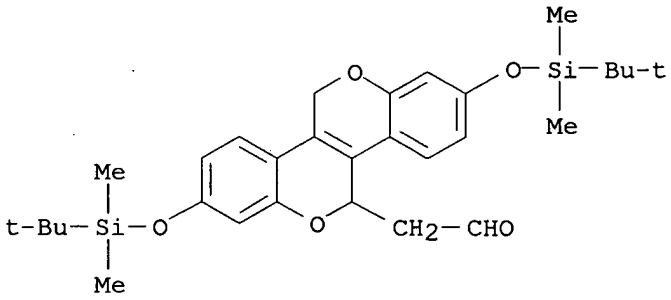
RN 554430-35-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-methyl-5-[3-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



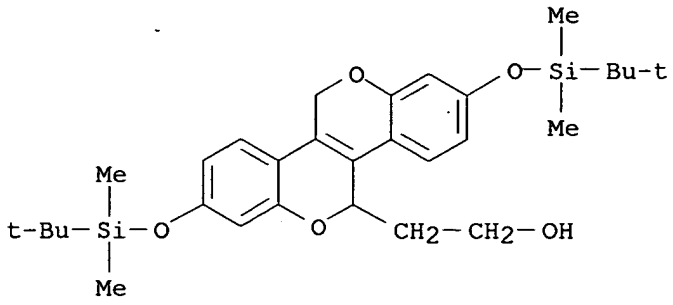
RN 554430-50-1 CAPLUS
CN Carbonothioic acid, O-[2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,6,7,13-tetrahydro-13-oxo[1]benzopyrano[4,3-e][1]benzoxocin-6-yl] O-phenyl ester (9CI) (CA INDEX NAME)



RN 554430-51-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetaldehyde, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro- (9CI) (CA INDEX NAME)

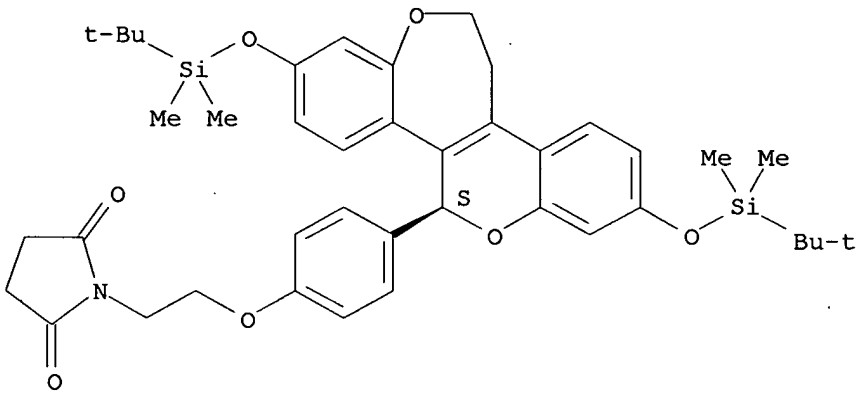


RN 554430-52-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ethanol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro- (9CI) (CA INDEX NAME)

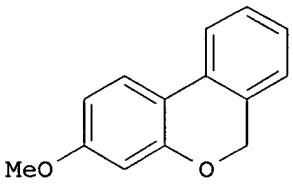


RN 554431-90-2 CAPLUS
CN 2,5-Pyrrolidinedione, 1-[2-[4-[(5S)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

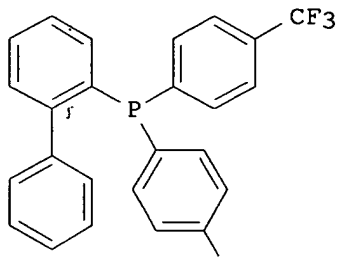
Absolute stereochemistry. Rotation (-).



L22 ANSWER 2 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:553571 CAPLUS
DOCUMENT NUMBER: 141:140284
TITLE: Biaryl synthesis via direct arylation: establishment of an efficient catalyst for intramolecular processes
AUTHOR(S): Campeau, Louis-Charles; Parisien, Mathieu; Leblanc, Melissa; Fagnou, Keith
CORPORATE SOURCE: Center for Catalysis Research and Innovation, University of Ottawa, Ottawa, ON, K1N 6N5, Can.
SOURCE: Journal of the American Chemical Society (2004), 126(30), 9186-9187
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 141:140284
GI



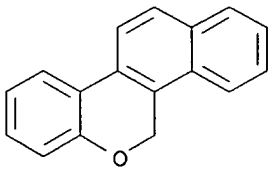
I



II

AB The direct arylation reaction with improved scope and catalyst activity for the intramol. formation of biaryl compds., e.g., I, is reported. This was achieved through the establishment of a highly active and robust catalyst system and the subsequent development of a phosphine ligand II. The enhanced catalytic activity, extended these transformations to include previously unreactive and poorly reactive substrates, and allowed for very low catalyst loadings.

IT **218-18-8P**, 5H-Benzo[b]naphtho[2,1-d]pyran
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of biaryls via palladium-catalyzed intramol. arylation of aryl bromophenylalkyl ethers, N-methyl-N-(phenyl)-bromobenzamide, and (bromophenylethyl)benzene in the presence of phosphine ligands)
RN 218-18-8 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran (8CI, 9CI) (CA INDEX NAME)



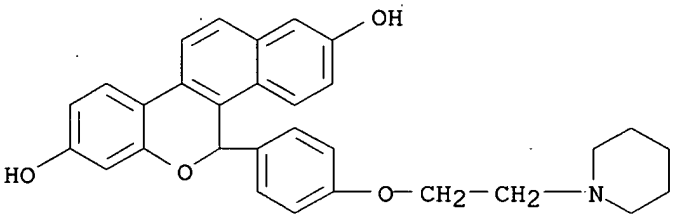
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 3 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:548950 CAPLUS
DOCUMENT NUMBER: 141:134250
TITLE: Is it possible docking and scoring new ligands with few experimental data? Preliminary results on estrogen receptor as a case study
AUTHOR(S): Cozzini, P.; Dottorini, T.
CORPORATE SOURCE: Molecular Modelling Laboratory, Department of General and Inorganic Chemistry, Parco Area delle Scienze, University of Parma, Parma, 43100, Italy
SOURCE: European Journal of Medicinal Chemistry (2004), 39(7), 601-609
CODEN: EJMCA5; ISSN: 0223-5234
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Estrogens are steroid hormones playing critical roles in several physiol. processes, which bind the estrogen receptors ERα and ERβ. Aim of this work is to analyze, by different docking expts., the behavior of a set of compds., mimicking estrogens activity, to understand the relationship between ERα and such new ligands. Main goal is to verify, using a widely tested scoring software procedure applied on a set of 10 compds., the possibility to produce new lead candidate mols. in lack of, or with few exptl. data. The authors' preliminary results reveal the significance of HINT software as a scoring function in docking methodol. and specifically, as a mean for assessing the consistency of docking solns.

IT **188824-17-1**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(possible docking and scoring new ligands with few exptl. data in relation to preliminary results on estrogen receptor)

RN 188824-17-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



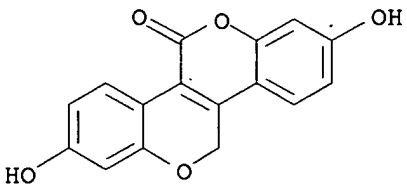
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 4 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:548891 CAPLUS
DOCUMENT NUMBER: 141:243297
TITLE: A facile synthesis of an unsymmetric benzopyranobenzopyran ring system
AUTHOR(S): Kanojia, Ramesh M.; Jain, Nareshkumar; Xu, Jiayi; Sui, Zhihua
CORPORATE SOURCE: Johnson & Johnson Pharmaceutical Research and Development, LLC, Raritan, NJ, 08869, USA
SOURCE: Tetrahedron Letters (2004), 45(30), 5837-5839
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 141:243297

AB A facile route to the synthesis of an unsym. benzopyranobenzopyran ring system is described. A key feature of this synthesis incorporates a tandem deprotection-cyclization strategy to construct the C-ring of the tetracyclic system.

IT **554430-69-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of an unsym. benzopyranobenzopyran ring system via tandem deprotection-cyclization strategy)

RN 554430-69-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2,8-dihydroxy- (9CI) (CA INDEX NAME)



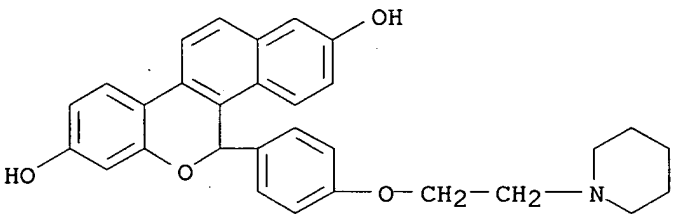
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 5 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:42543 CAPLUS
DOCUMENT NUMBER: 140:246121
TITLE: Ligand-Based Structural Hypotheses for Virtual Screening
AUTHOR(S): Jain, Ajay N.
CORPORATE SOURCE: UCSF Cancer Research Institute and Comprehensive Cancer Center, University of California, San Francisco, CA, 94143-0128, USA
SOURCE: Journal of Medicinal Chemistry (2004), 47(4), 947-961
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The majority of drug targets for small mol. therapeutics are proteins whose three-dimensional structure is not known to sufficient resolution to permit structure-based design. All three-dimensional QSAR approaches have a requirement for some hypothesis of ligand conformation and alignment, and predictions of mol. activity critically depend on this ligand-based binding site hypothesis. The mol. similarity function used in the Surflex docking system, coupled with quant. pressure to minimize overall mol. volume, forms an effective objective function for generating hypotheses of bioactive conformations of sets of small mols. binding to their cognate proteins. Results are presented, assessing utility of the method for ligands of the serotonin, histamine, muscarinic, and GABAA receptors. The Surflex similarity module (Surflex-Sim) was able, in each case, to distinguish true ligands from random compds. using models constructed from just two or three known ligands. True pos. rates of 60% were achieved with false pos. rates of 0-3%; the theor. enrichment rates were over 150-fold compared with random screening. The methods are practically applicable for rational design of ligands and for high-throughput virtual screening and offer competitive performance to many structure-based docking algorithms.

IT **188824-17-1**, LY-357489
RL: PAC (Pharmacological activity); PRP (Properties); BIOL (Biological study)
(estrogen receptor ligand; ligand-based structural hypotheses for virtual screening applied to ligands of different receptors and targets)

RN 188824-17-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

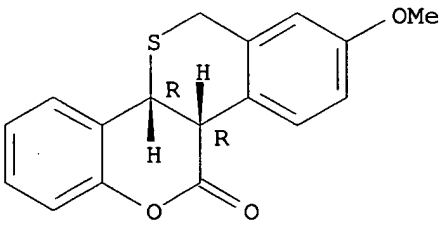
L22 ANSWER 6 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:915312 CAPLUS
DOCUMENT NUMBER: 140:93958
TITLE: Carbon-carbon bond formation by radical cyclisation: Regioselective synthesis of coumarin-annulated sulfur heterocycles
AUTHOR(S): Majumdar, K. C.; Biswas, A.; Mukhopadhyay, P. P.
CORPORATE SOURCE: Department of Chemistry, University of Kalyani, Kalyani, 741 235, India
SOURCE: Synthesis (2003), (15), 2385-2389
CODEN: SYNTBF; ISSN: 0039-7881
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A simple convergent synthesis of cis-benzothiopyrano[3,2-c]benzopyran-7(2H)-ones (70-75%) through implementation of a regioselective 6-endo-trig aryl radical cyclization of the resp. 4-[(2-bromobenzyl)sulfanyl]-2H-chromen-2-ones (80-85%) with tributyltin hydride in the presence of a radical initiator (AIBN) is described. The starting materials are synthesized by phase-transfer-catalyzed reaction of 4-sulfanyl-2H-chromen-2-ones with 2-bromobenzyl bromides.

IT **645411-95-6P 645411-96-7P 645411-97-8P**
645411-98-9P 645411-99-0P 645412-00-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(carbon-carbon bond formation by radical cyclization and regioselective synthesis of coumarin-annulated sulfur heterocycles)

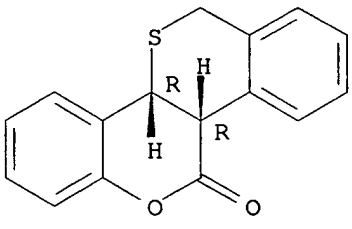
RN 645411-95-6 CAPLUS
CN 6H,11H-[2]Benzothiopyrano[4,3-c][1]benzopyran-11-one, 4b,10b-dihydro-8-methoxy-, (4bR,10bR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



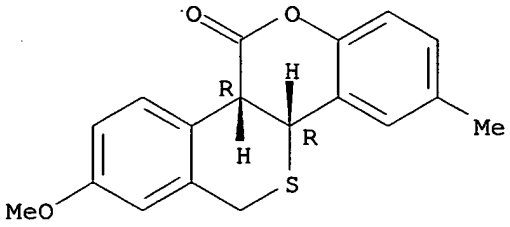
RN 645411-96-7 CAPLUS
CN 6H,11H-[2]Benzothiopyrano[4,3-c][1]benzopyran-11-one, 4b,10b-dihydro-, (4bR,10bR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



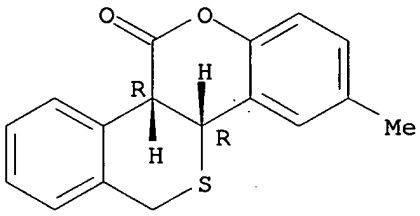
RN 645411-97-8 CAPLUS
CN 6H,11H-[2]Benzothiopyrano[4,3-c][1]benzopyran-11-one, 4b,10b-dihydro-8-methoxy-3-methyl-, (4bR,10bR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



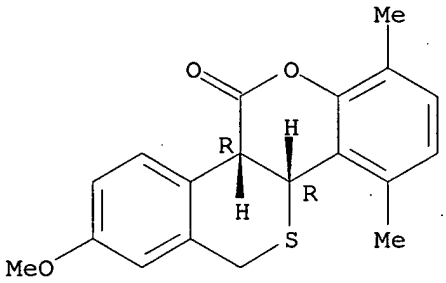
RN 645411-98-9 CAPLUS
CN 6H,11H-[2]Benzothiopyrano[4,3-c][1]benzopyran-11-one, 4b,10b-dihydro-3-methyl-, (4bR,10bR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



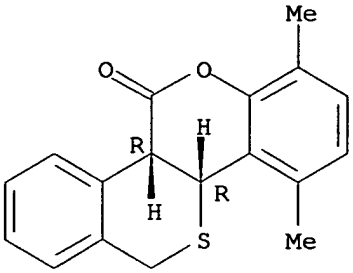
RN 645411-99-0 CAPLUS
CN 6H,11H-[2]Benzothiopyrano[4,3-c][1]benzopyran-11-one, 4b,10b-dihydro-8-methoxy-1,4-dimethyl-, (4bR,10bR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 645412-00-6 CAPLUS
CN 6H,11H-[2]Benzothiopyrano[4,3-c][1]benzopyran-11-one, 4b,10b-dihydro-1,4-dimethyl-, (4bR,10bR)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



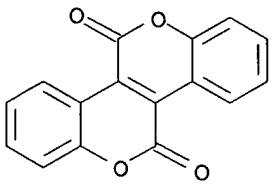
REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 7 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:807792 CAPLUS
DOCUMENT NUMBER: 140:391166
TITLE: Product class 4: benzopyranones and benzopyranthiones
AUTHOR(S): Williams, A. C.; Camp, N.
CORPORATE SOURCE: Germany
SOURCE: Science of Synthesis (2003), 14, 347-638
CODEN: SSCYJ9
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

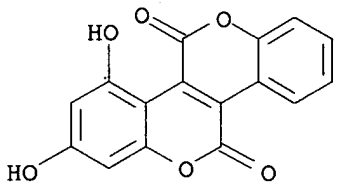
AB A review. Methods for preparing 2H-1-benzopyran-2-ones, 4H-1-benzopyran-4-ones, 1H-2-benzopyran-1-ones, 6H-dibenzo[b,d]pyran-6-ones, 9H-xanthenones and their corresponding thione analogs as well as 3H-2-benzopyran-3-ones are surveyed. Synthetic methods include ring closure, ring transformation, aromatization and substituent modification reactions.

IT **13225-81-5P 20503-15-5P 80360-50-5P**
80360-51-6P 80360-52-7P 685828-95-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(review of preparation of benzopyranones and benzopyranthiones via ring closure, ring transformations, aromatization and substituent modifications)

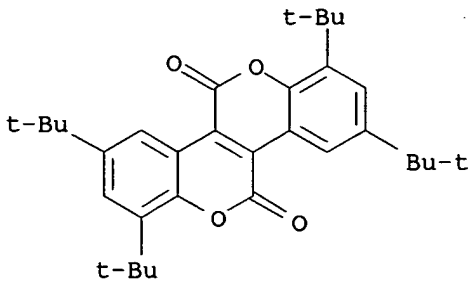
RN 13225-81-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



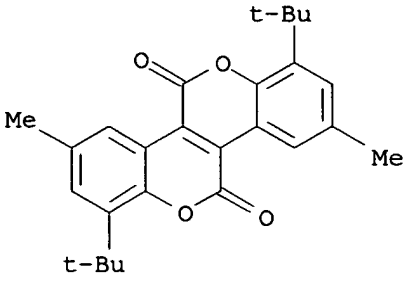
RN 20503-15-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 2,4-dihydroxy- (8CI, 9CI) (CA INDEX NAME)



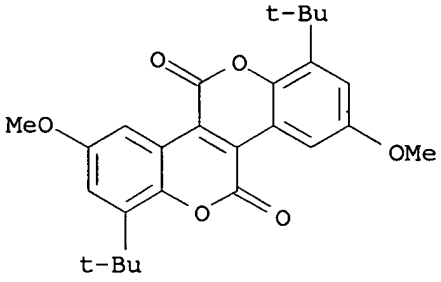
RN 80360-50-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,3,7,9-tetrakis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



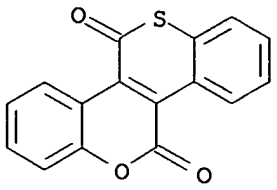
RN 80360-51-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-dimethyl- (9CI) (CA INDEX NAME)



RN 80360-52-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-dimethoxy- (9CI) (CA INDEX NAME)



RN 685828-95-9 CAPLUS
CN [1]Benzothiopyrano[4,3-c][1]benzopyran-5,11-dione (9CI) (CA INDEX NAME)



REFERENCE COUNT: 1083 THERE ARE 1083 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

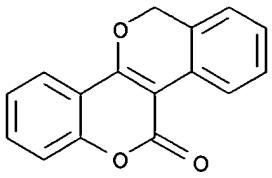
L22 ANSWER 8 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:758920 CAPLUS
DOCUMENT NUMBER: 139:395590
TITLE: Photoreactions of 3-Diazo-3H-benzofuran-2-one; Dimerization and Hydrolysis of Its Primary Photoproduct, A Quinonoid Cumulenone: A Study by Time-Resolved Optical and Infrared Spectroscopy
AUTHOR(S): Chiang, Yvonne; Gaplovsky, Martin; Kresge, A. Jerry; Leung, King Hung; Ley, Christian; Mac, Marek; Persy, Gabriele; Phillips, David L.; Popik, Vladimir V.; Roedig, Christoph; Wirz, Jakob; Zhu, Yu
CORPORATE SOURCE: The Department of Chemistry, University of Toronto, Toronto, ON, M5S 3H6, Can.
SOURCE: Journal of the American Chemical Society (2003), 125(42), 12872-12880
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:395590

AB Light-induced deazotization of 3-diazo-3H-benzofuran-2-one (1) in solution is accompanied by facile (CO)-O bond cleavage yielding 6-(oxoethenylidene)-2,4-cyclohexadien-1-one (3), which appears with a rise time of 28 ps. The expected Wolff-rearrangement product, 7-oxabicyclo[4.2.0]octa-1,3,5-trien-8-ylidenemethanone (4), is not formed. The efficient light-induced formation of the quinonoid cumulenone 3 opens the way to determine the reactivity of a cumulenone in solution The reaction kinetics of 3 were monitored by nanosecond flash photolysis with optical (λmax ≈ 460 nm) as well as Raman (1526 cm-1) and IR detection (2050 cm-1). Remarkably, the reactivity of 3 is that expected from its valence isomer, the cyclic carbene 3H-benzofuran-2-one-3-ylidene, 2. In aqueous solution, acid-catalyzed addition of water forms the lactone 3-hydroxy-3H-benzofuran-2-one (5). The reaction is initiated by protonation of the cumulenone on its β-carbon atom. In hexane, cumulenone 3 dimerizes to isoxindigo ((E)-[3,3']bibenzofuranylidene-2,2'-dione, 7), coumestan (6H-benzofuro[3,2-c][1]benzopyran-6-one, 8), and a small amount of dibenzonaphthyrone ([1]benzopyrano[4,3-][1]benzopyran-5,11-dione, 9) at a nearly diffusion-controlled rate. Ab initio calcns. (G3) are consistent with the observed data. Carbene 2 is predicted to have a singlet ground state, which undergoes very facile, strongly exothermic (irreversible) ring opening to the cumulenone 3. The calculated barrier to formation of 4 (Wolff-rearrangement) is prohibitive. DFT calcns. indicate that protonation of 3 on the β-carbon is accompanied by cyclization to the protonated carbene 2H+, and that dimerization of 3 to 7 and 9 takes place in a single step with negligible activation energy.

IT **96600-94-1P**
RL: BYP (Byproduct); PREP (Preparation)
(photoreactions of diazobenzofuranone dimerization and hydrolysis of its primary photoproduct)

RN 96600-94-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one (9CI) (CA INDEX NAME)



REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 9 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:678670 CAPLUS
DOCUMENT NUMBER: 139:192008
TITLE: Methods and composition for treating decreased libido in women with estrogenic components
INVENTOR(S): Coelingh Bennink, Herman Jian Tijmen
PATENT ASSIGNEE(S): Pantarhei Bioscience B.V., Neth.
SOURCE: PCT Int. Appl., 17 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003070253	A1	20030828	WO 2003-NL125	20030219

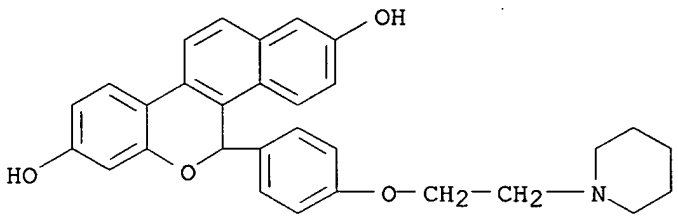
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: EP 2002-75696 A 20020221

AB The present invention is concerned with a method of treating decreased libido in pre-menopausal women, said decreased libido being the result of the repeated administration of a progestogenic component, wherein the method comprises the administration of the estrogenic component to a woman in an effective amount to improve the woman's libido. The present method is particularly suited for treating decreased libido in women using hormonal contraceptives that employ administration of a progestogenic component.

IT **188824-17-1**, LY-357489
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(methods and composition for treating decreased libido in women with estrogenic components)

RN 188824-17-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

applicant

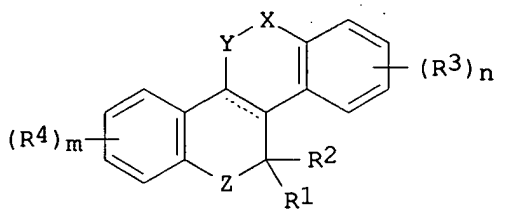
L22 ANSWER 10 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:511339 CAPLUS
DOCUMENT NUMBER: 139:85328
TITLE: Preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs).
INVENTOR(S): Kanojia, Ramesh M.; Jain, Nareshkumar F.; Ng, Raymond; Sui, Zhihua; Xu, Jiayi
PATENT ASSIGNEE(S): Ortho-McNeil Pharmaceutical, Inc., USA
SOURCE: PCT Int. Appl., 306 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003053977	A1	20030703	WO 2002-US38486	20021202
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
BR 2002015152	A	20041019	BR 2002-15152	20021202
EP 1467998	A1	20041020	EP 2002-797167	20021202
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				

PRIORITY APPLN. INFO.: US 2001-341957P P 20011219
WO 2002-US38486 W 20021202

OTHER SOURCE(S): MARPAT 139:85328
GI



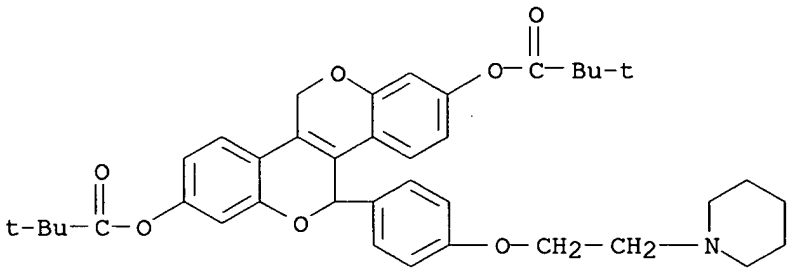
I

AB Title compds. [I; dotted line = optional double bond; X = O, S, CRaRb, CO; Y = CRaRb, CRaRb(CRaRb)1-2, CRaRbCO, CRaRbCOCRaRb, CO, O, S; Z = O, S; R1 = H, (substituted) alkyl, alkenyl, cycloalkyl, aryl, aroyl, aralkyl, heteroaryl, heteroarylalkyl; R2 = OH, (substituted) alkyl, alkenyl, cycloalkyl, aryl, aroyl, aralkyl, heteroaryl, heteroarylalkyl; R1R2 = O; m, n = 0-4; R3, R4 = halo, OH, amino, NO2, cyano, CORg, CO2Rg, etc.; Rg = H, alkyl, aryl, aralkyl, 1,7,7-trimethyl-2-oxabicyclo[2.2.1]heptan-3-one; with provisos], were prepared Thus, 3-(2-hydroxy-4-methoxyphenyl)-7-hydroxy-

4-methylchromen-2-one (preparation given), in methanol/acetone was added at room temperature anhydrous potassium carbonate; the solution was stirred 2 h to give
2,8-dihydroxy-1H-chromeno[4,3-c]chromen-5-one. The latter bound to estrogen α and β receptors at 0.505 μM αnd 0.061 μM, resp. I are useful in the treatment and/or prevention of disorders associated with the depletion of estrogen such as hot flashes, vaginal dryness, osteopenia and osteoporosis; hormone sensitive cancers and hyperplasia of the breast, endometrium, cervix and prostate; endometriosis, uterine fibroids, osteoarthritis and as contraceptive agents, alone or in combination with a progestogen or progestogen antagonist.

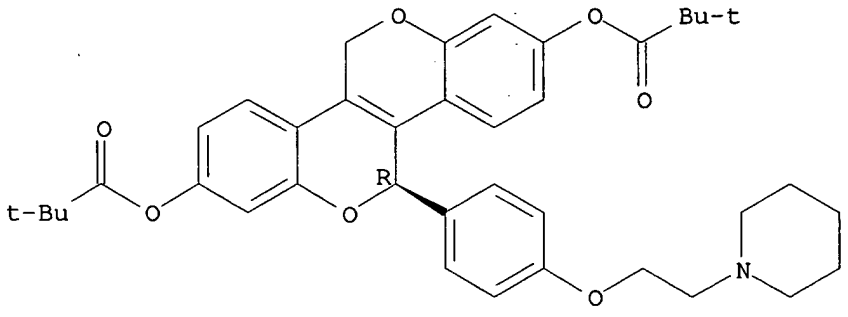
IT **554429-87-7P 554429-88-8P 554429-89-9P 554429-90-2P 554429-91-3P 554429-92-4P 554429-93-5P 554429-94-6P 554429-95-7P 554429-96-8P**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(claimed compound; preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs))

RN 554429-87-7 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)



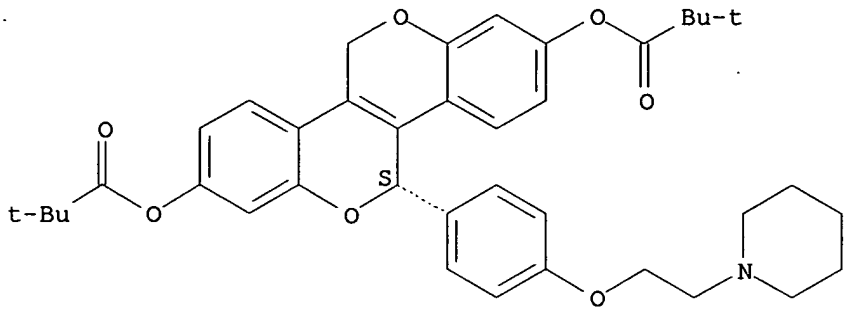
RN 554429-88-8 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5R)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.

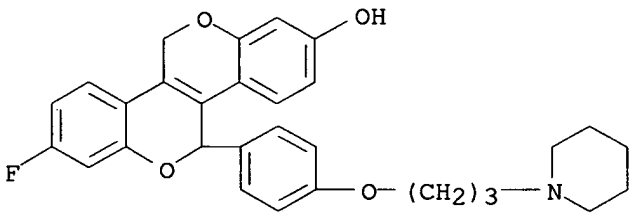


RN 554429-89-9 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5S)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)

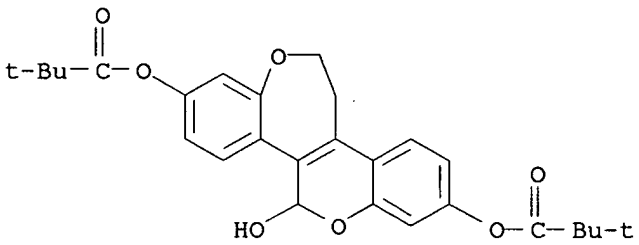
Absolute stereochemistry.



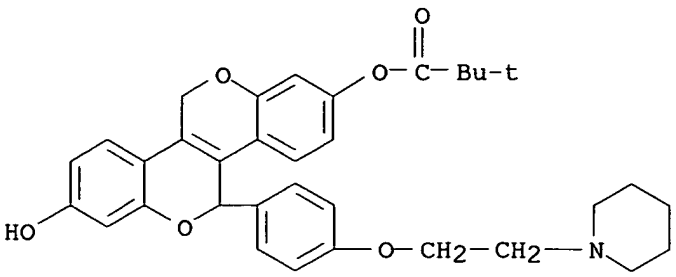
RN 554429-90-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 8-fluoro-5,11-dihydro-5-[4-[3-(1-piperidinyl)propoxy]phenyl]- (9CI) (CA INDEX NAME)



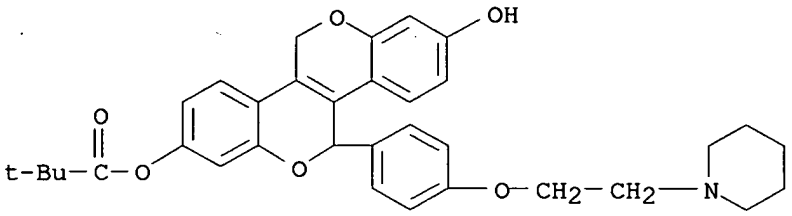
RN 554429-91-3 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 11,12-dihydro-5-hydroxy-5H-[1]benzopyrano[4,3-d][1]benzoxepin-2,8-diyl ester (9CI) (CA INDEX NAME)



RN 554429-92-4 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-8-hydroxy-5-[4-[3-(1-piperidinyl)propoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

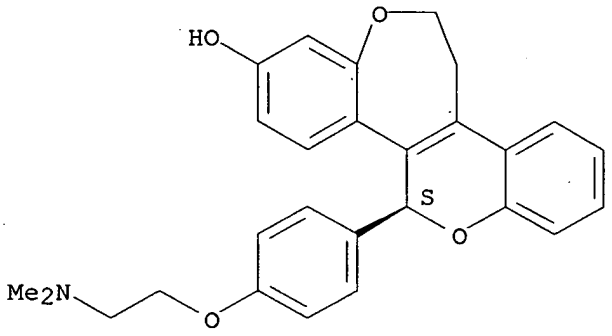


RN 554429-93-5 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-8-hydroxy-11-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

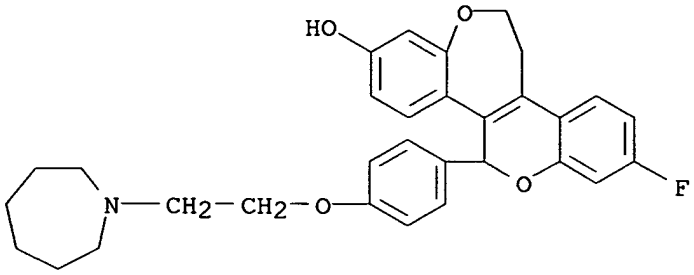


RN 554429-94-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

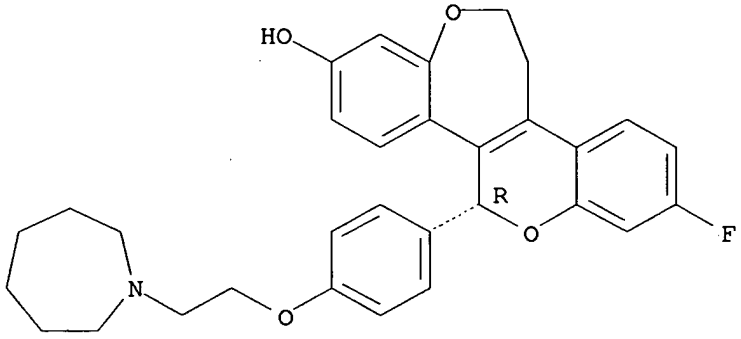


RN 554429-95-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 8-fluoro-5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



RN 554429-96-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 8-fluoro-5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **554429-97-9P 554430-39-6P 554430-43-2P**
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554430-60-3P 554430-85-2P 554430-86-3P
554430-87-4P 554430-88-5P 554430-89-6P
554430-90-9P 554430-91-0P 554430-92-1P
554430-93-2P 554430-94-3P 554430-95-4P
554430-96-5P 554430-97-6P 554430-98-7P
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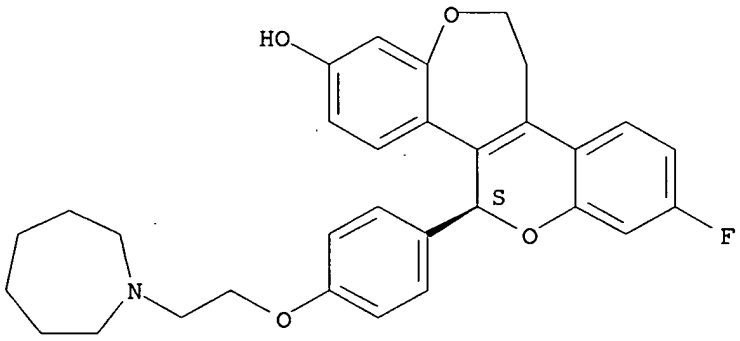
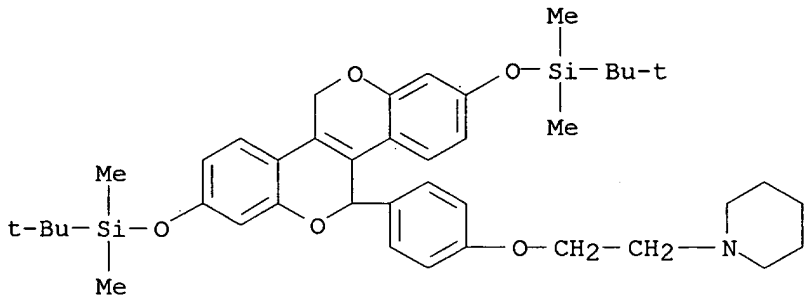
554431-86-6P 554431-87-7P 554431-88-8P
554431-92-4P 554431-93-5P 554433-05-5P
554433-06-6P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs))

RN 554429-97-9 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 8-fluoro-5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

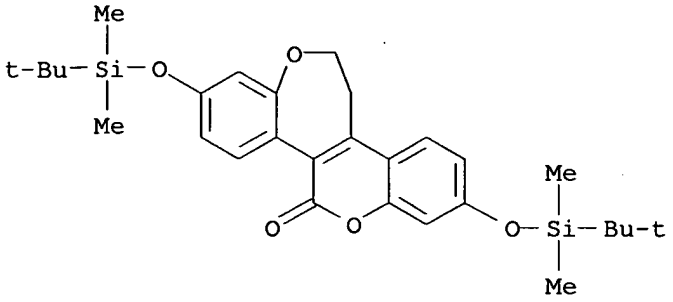


RN 554430-39-6 CAPLUS
CN Silane, [[5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)

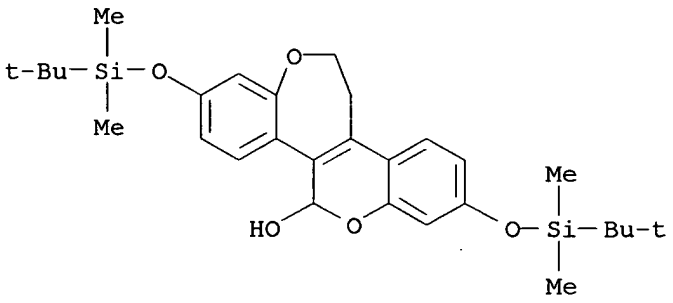


RN 554430-43-2 CAPLUS

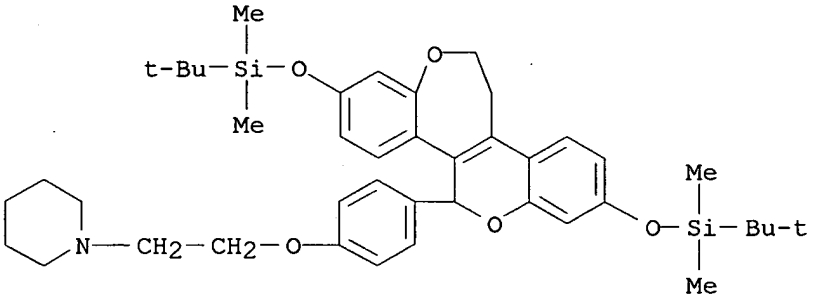
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



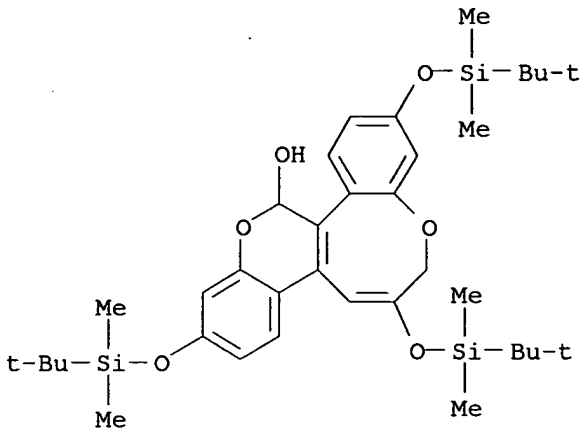
RN 554430-44-3 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



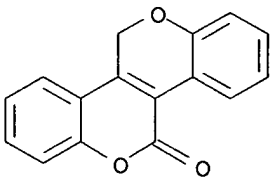
RN 554430-45-4 CAPLUS
CN Piperidine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



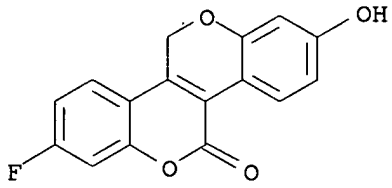
RN 554430-48-7 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13-ol, 2,6,10-tris[[(1,1-dimethylethyl)dimethylsilyl]oxy]-7,13-dihydro- (9CI) (CA INDEX NAME)



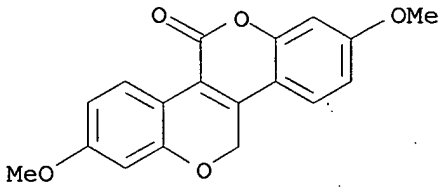
RN 554430-60-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one (9CI) (CA INDEX NAME)



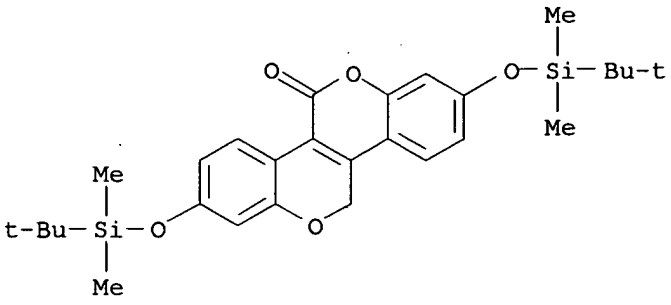
RN 554430-85-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 8-fluoro-2-hydroxy- (9CI) (CA INDEX NAME)



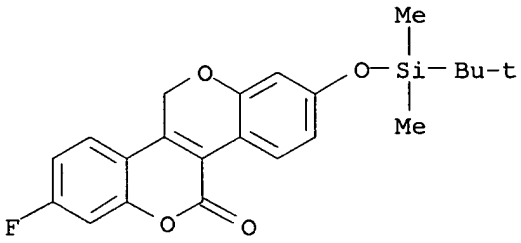
RN 554430-86-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2,8-dimethoxy- (9CI) (CA INDEX NAME)



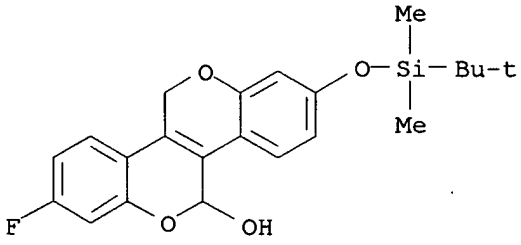
RN 554430-87-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



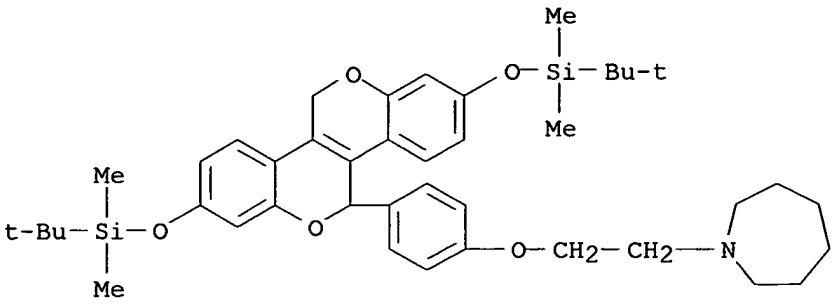
RN 554430-88-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro- (9CI) (CA INDEX NAME)



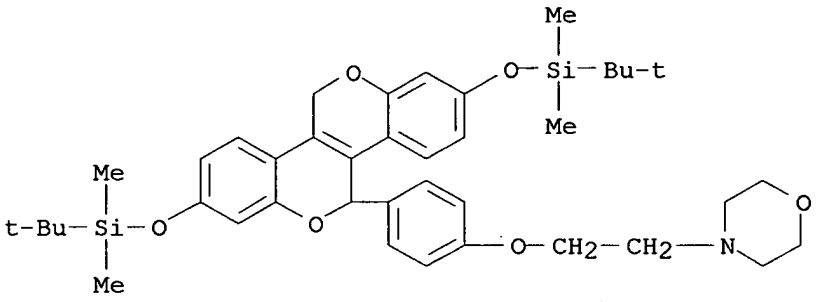
RN 554430-89-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro-5,11-dihydro- (9CI) (CA INDEX NAME)



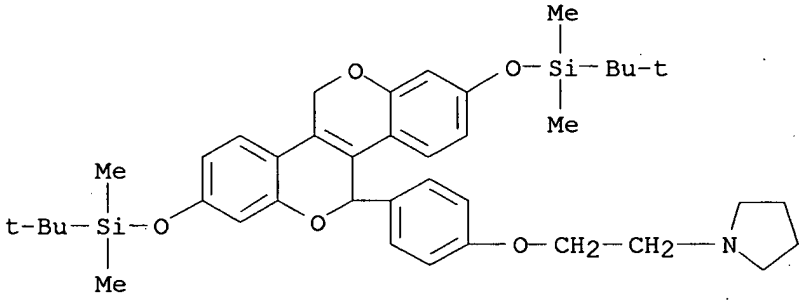
RN 554430-90-9 CAPLUS
CN 1H-Azepine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]hexahydro- (9CI) (CA INDEX NAME)



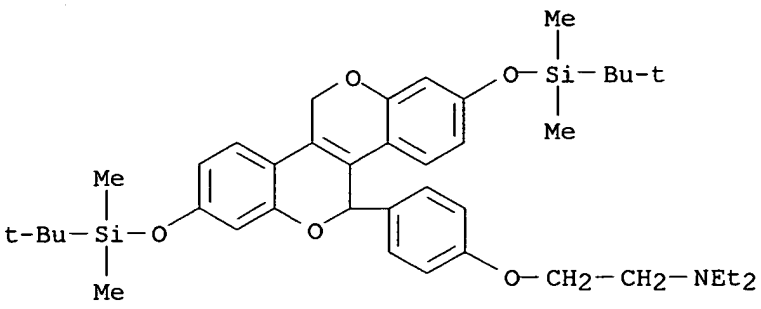
RN 554430-91-0 CAPLUS
CN Morpholine, 4-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



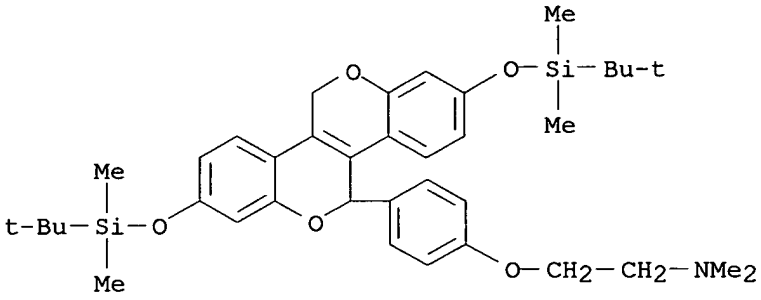
RN 554430-92-1 CAPLUS
CN Pyrrolidine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



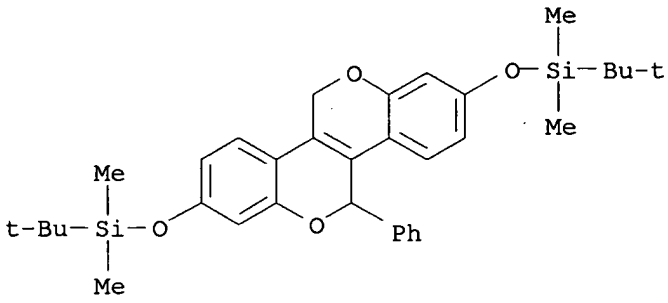
RN 554430-93-2 CAPLUS
CN Ethanamine, 2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]-N,N-diethyl- (9CI) (CA INDEX NAME)



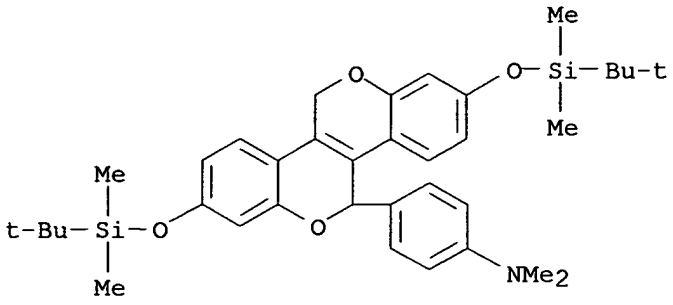
RN 554430-94-3 CAPLUS
CN Ethanamine, 2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)



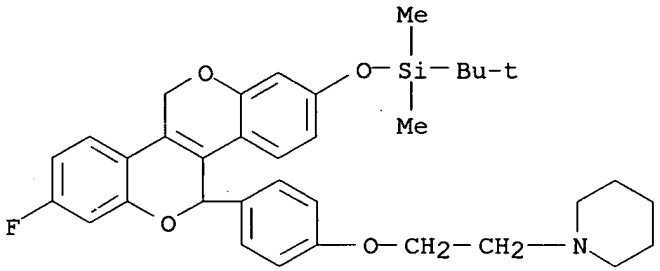
RN 554430-95-4 CAPLUS
CN Silane, [(5,11-dihydro-5-phenyl[1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl)bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



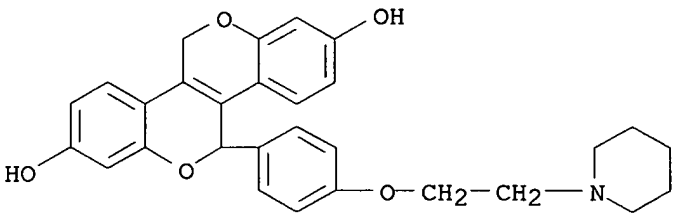
RN 554430-96-5 CAPLUS
CN Benzenamine, 4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]-N,N-dimethyl- (9CI) (CA INDEX NAME)



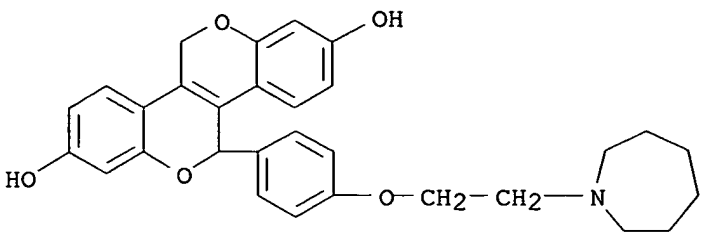
RN 554430-97-6 CAPLUS
CN Piperidine, 1-[2-[4-[2-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



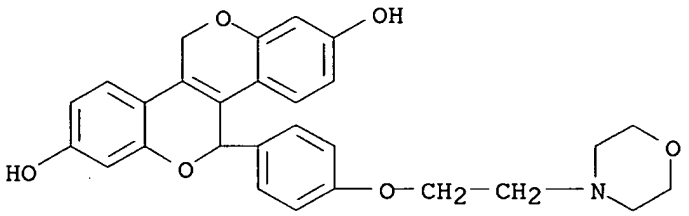
RN 554430-98-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



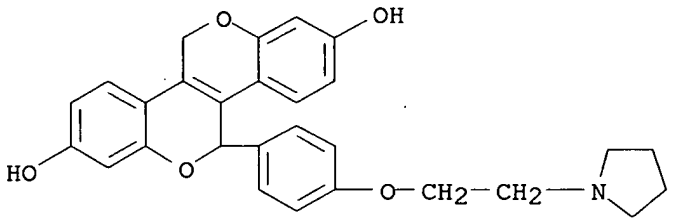
RN 554430-99-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-5,11-dihydro- (9CI) (CA INDEX NAME)



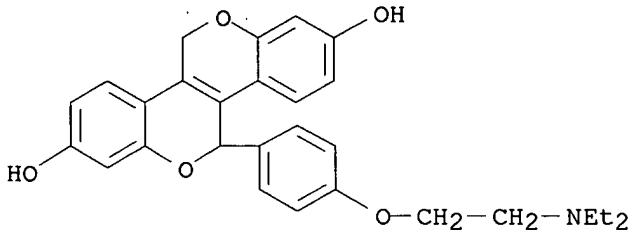
RN 554431-00-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(4-morpholinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



RN 554431-01-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

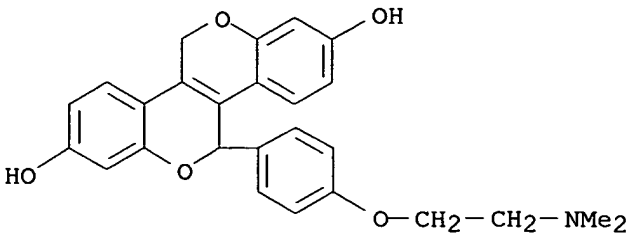


RN 554431-02-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-[2-(diethylamino)ethoxy]phenyl]-5,11-dihydro- (9CI) (CA INDEX NAME)

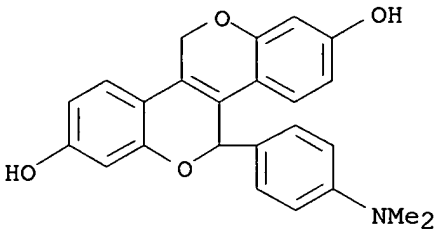


RN 554431-03-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-[2-

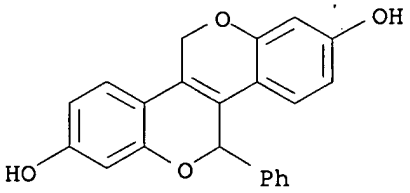
(dimethylamino)ethoxy]phenyl]-5,11-dihydro- (9CI) (CA INDEX NAME)



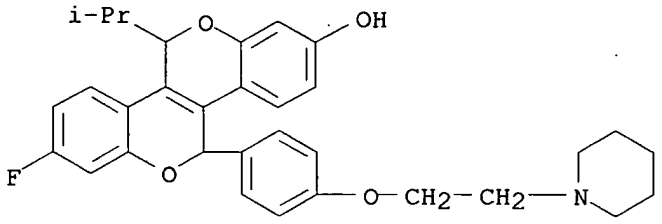
RN 554431-04-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-(dimethylamino)phenyl]-5,11-dihydro- (9CI) (CA INDEX NAME)



RN 554431-05-9 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-phenyl- (9CI) (CA INDEX NAME)

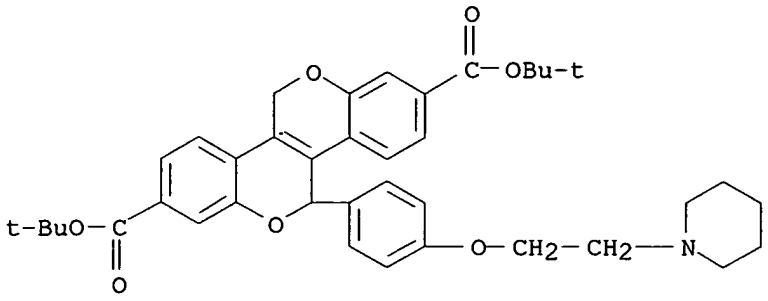


RN 554431-06-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 8-fluoro-5,11-dihydro-11-(1-methylethyl)-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

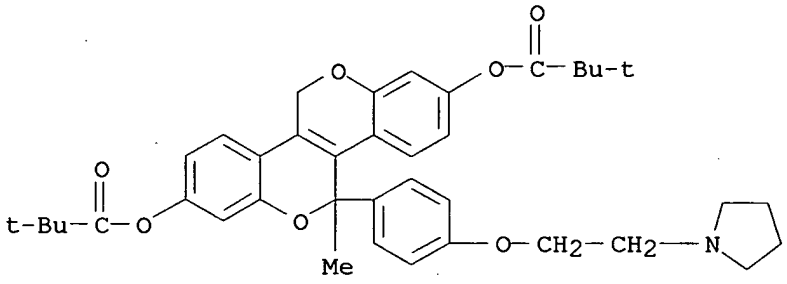


RN 554431-07-1 CAPLUS

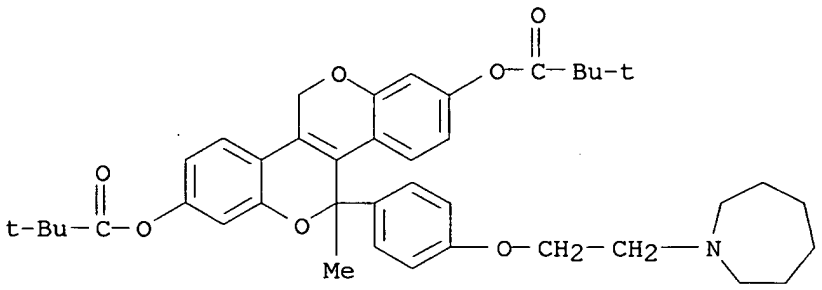
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-dicarboxylic acid, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



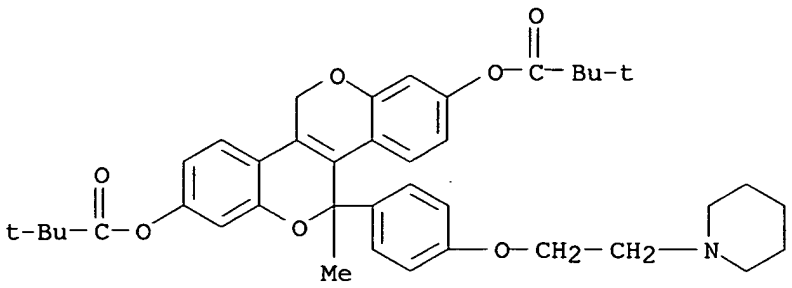
RN 554431-08-2 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-methyl-5-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)



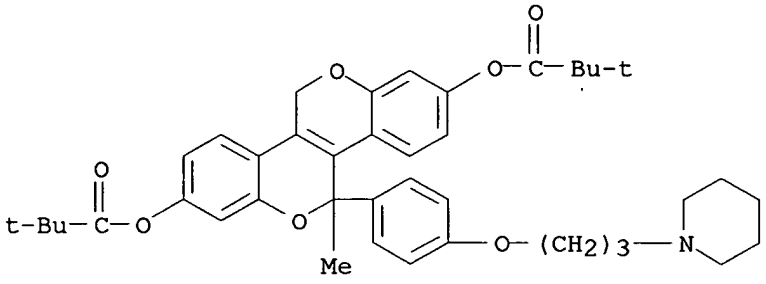
RN 554431-09-3 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-5,11-dihydro-5-methyl[1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)



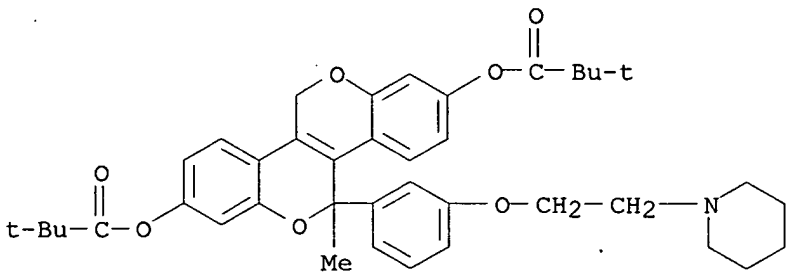
RN 554431-10-6 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-methyl-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)



RN 554431-11-7 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-methyl-5-[4-[3-(1-piperidinyl)propoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)

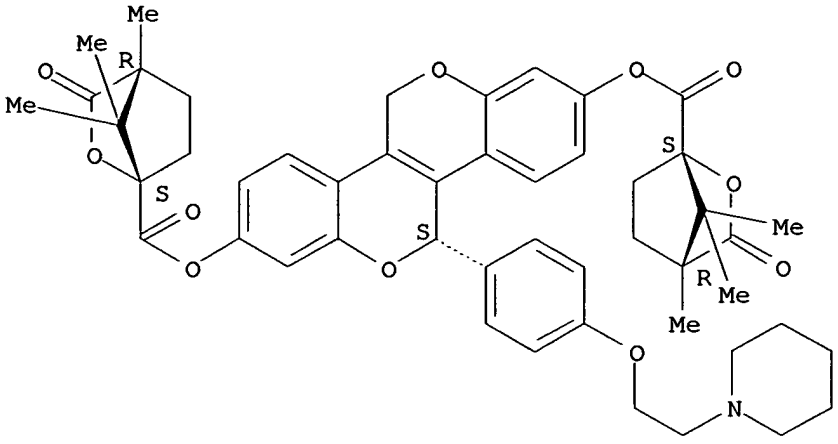


RN 554431-12-8 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-methyl-5-[3-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester (9CI) (CA INDEX NAME)

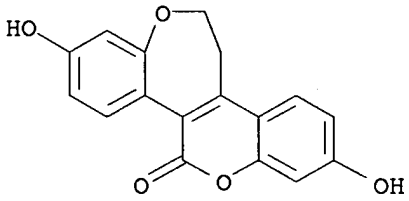


RN 554431-13-9 CAPLUS
CN 2-Oxabicyclo[2.2.1]heptane-1-carboxylic acid, 4,7,7-trimethyl-3-oxo-, (5S)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl ester, (1S,1'S,4R,4'R)- (9CI) (CA INDEX NAME)

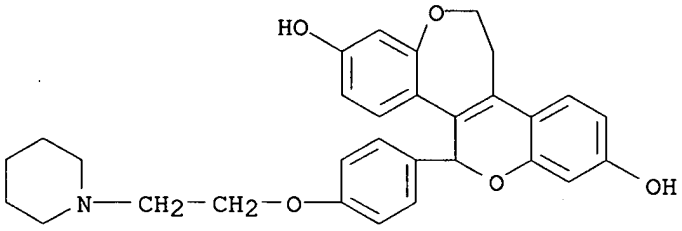
Absolute stereochemistry. Rotation (-).



RN 554431-14-0 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 11,12-dihydro-2,8-dihydroxy- (9CI) (CA INDEX NAME)

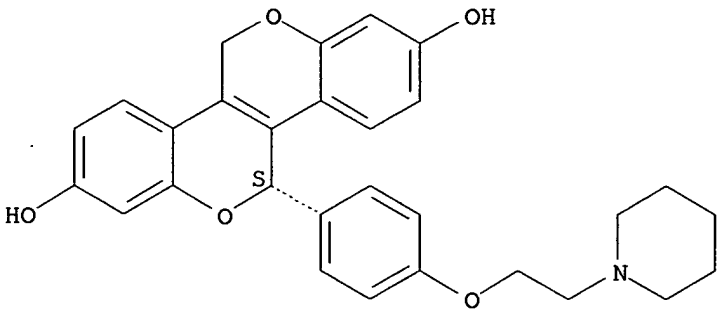


RN 554431-15-1 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 11,12-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



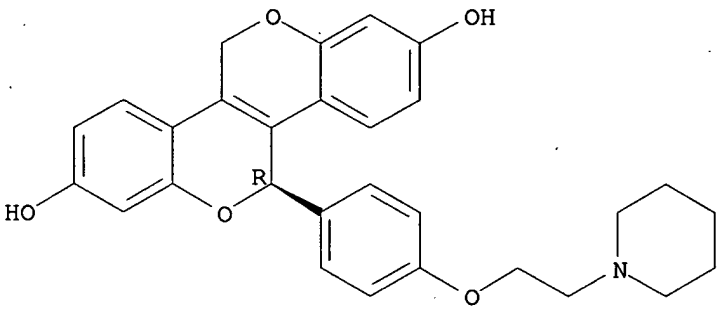
RN 554431-16-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

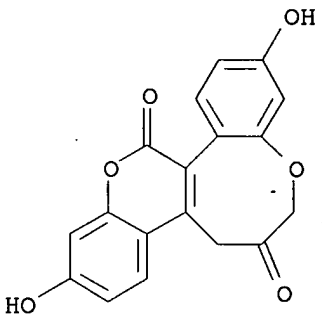


RN 554431-17-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5R)- (9CI) (CA INDEX NAME)

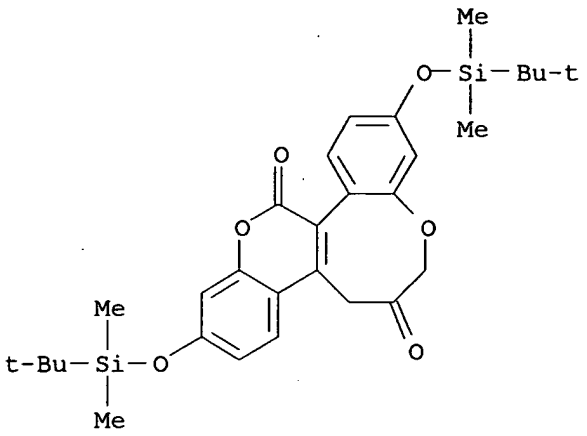
Absolute stereochemistry. Rotation (+).



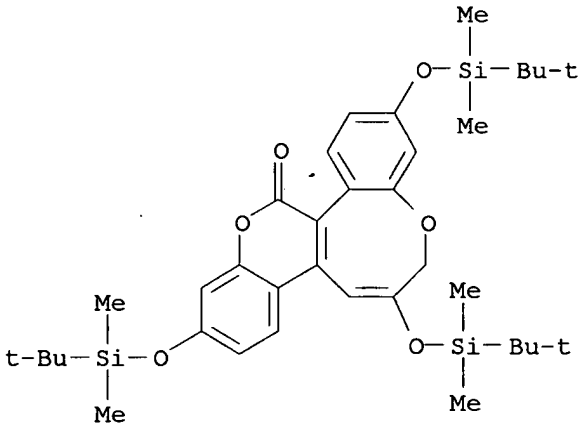
RN 554431-18-4 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-6,13(5H,7H)-dione, 2,10-dihydroxy- (9CI) (CA INDEX NAME)



RN 554431-19-5 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-6,13(5H,7H)-dione, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



RN 554431-20-8 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13(7H)-one, 2,6,10-tris[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



RN 554431-21-9 CAPLUS
CN Piperidine, 1-[2-[4-[2,6,10-tris[[(1,1-dimethylethyl)dimethylsilyl]oxy]-7,13-dihydro[1]benzopyrano[4,3-e][1]benzoxocin-13-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

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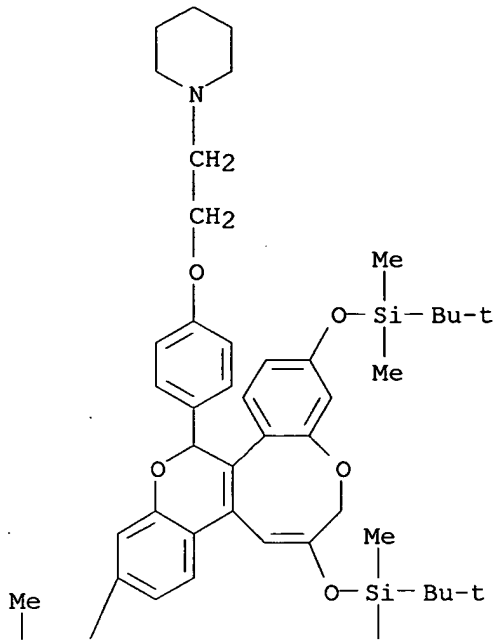

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RN 554431-22-0 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-6(7H)-one, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,13-dihydro-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

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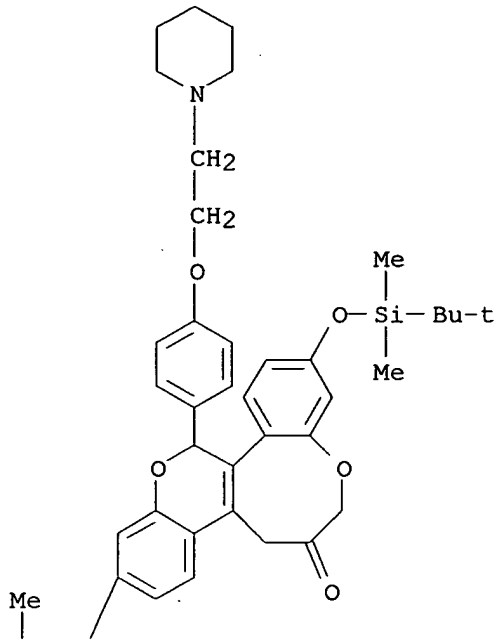

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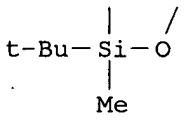
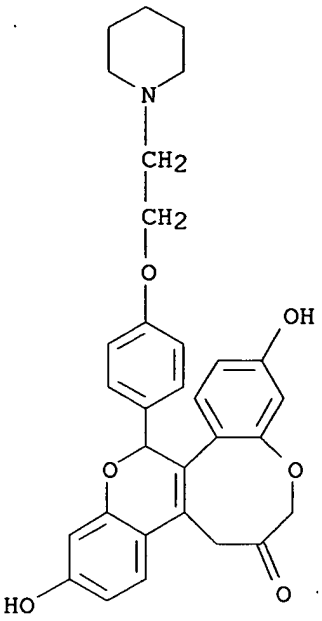
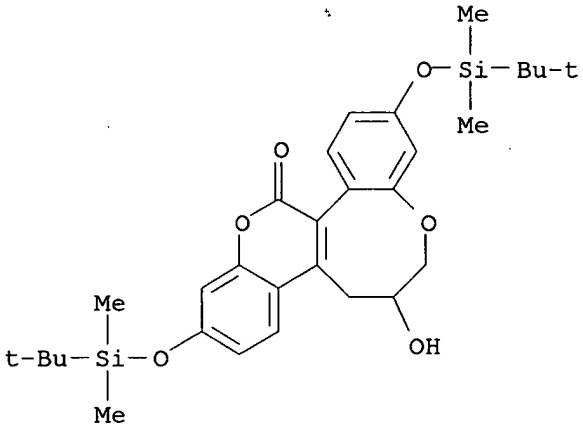


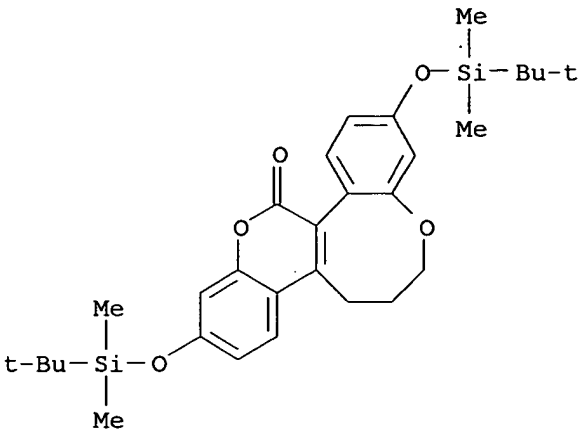
RN 554431-23-1 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-6(7H)-one, 5,13-dihydro-2,10-dihydroxy-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



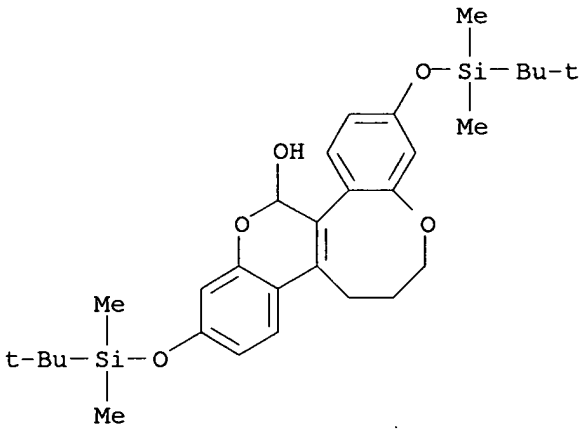
RN 554431-24-2 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13(5H)-one, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6,7-dihydro-6-hydroxy- (9CI) (CA INDEX NAME)



RN 554431-25-3 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13(5H)-one, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-6,7-dihydro- (9CI) (CA INDEX NAME)



RN 554431-26-4 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-13-ol, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,6,7,13-tetrahydro- (9CI) (CA INDEX NAME)



RN 554431-27-5 CAPLUS
CN Piperidine, 1-[2-[4-[2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,6,7,13-tetrahydro[1]benzopyrano[4,3-e][1]benzoxocin-13-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

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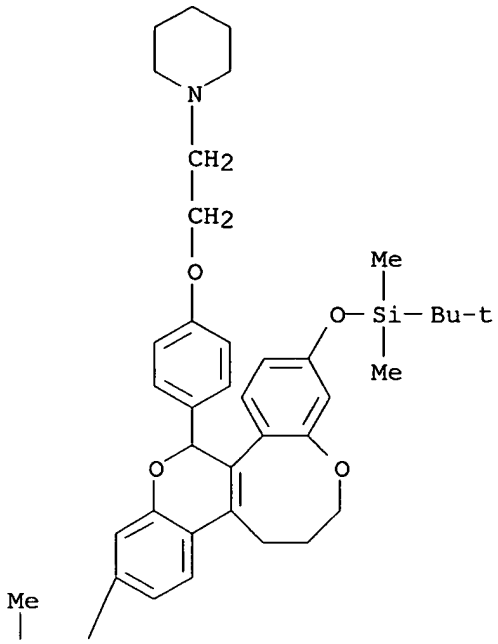

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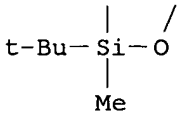
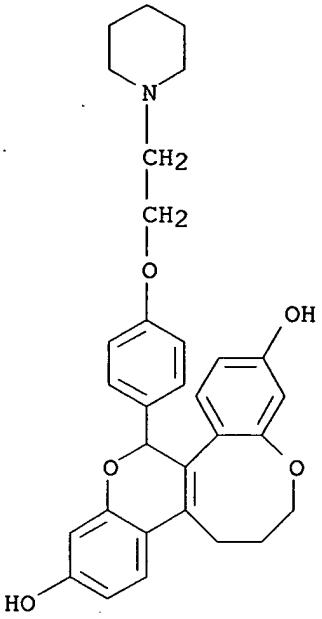
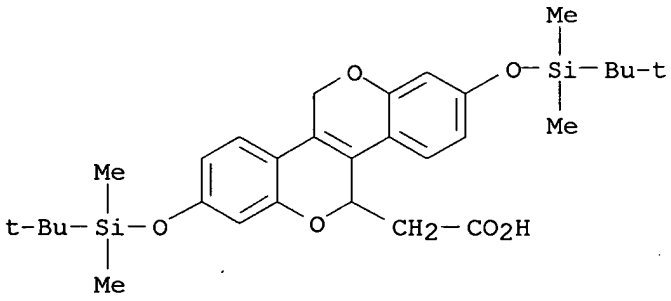


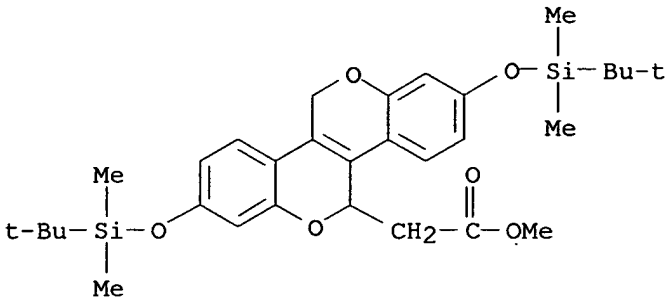
RN 554431-28-6 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-2,10-diol, 5,6,7,13-tetrahydro-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



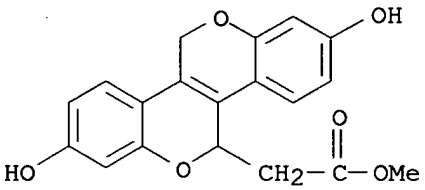
RN 554431-29-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro- (9CI) (CA INDEX NAME)



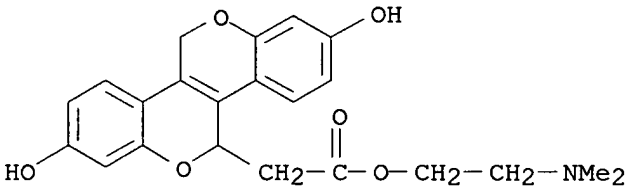
RN 554431-30-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro-, methyl ester (9CI) (CA INDEX NAME)



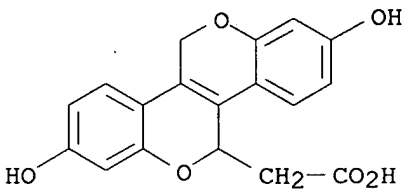
RN 554431-31-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 5,11-dihydro-2,8-dihydroxy-, methyl ester (9CI) (CA INDEX NAME)



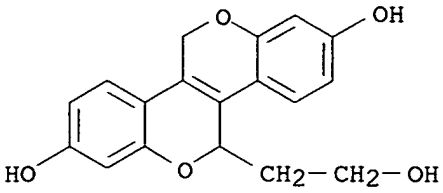
RN 554431-32-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 5,11-dihydro-2,8-dihydroxy-, 2-(dimethylamino)ethyl ester (9CI) (CA INDEX NAME)



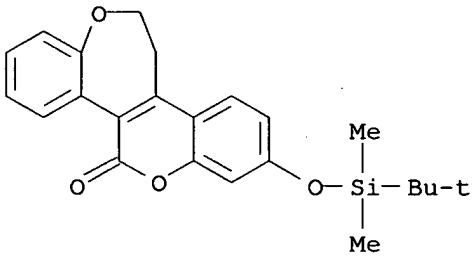
RN 554431-33-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetic acid, 5,11-dihydro-2,8-dihydroxy- (9CI) (CA INDEX NAME)



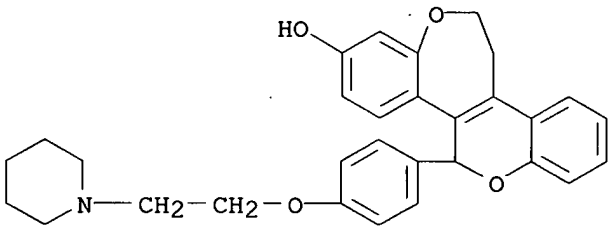
RN 554431-34-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-(2-hydroxyethyl)- (9CI) (CA INDEX NAME)



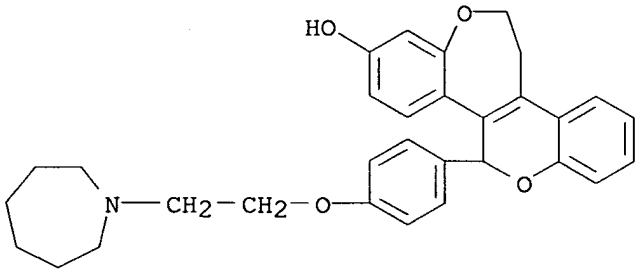
RN 554431-35-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 8-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



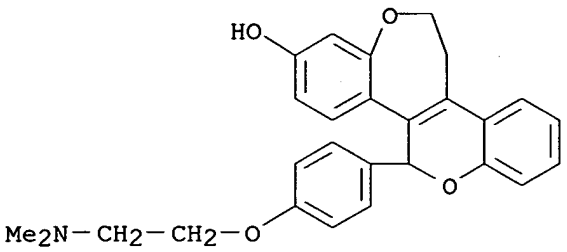
RN 554431-36-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 11,12-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



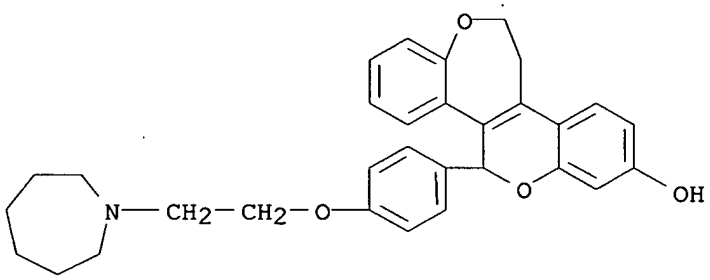
RN 554431-37-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



RN 554431-38-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)

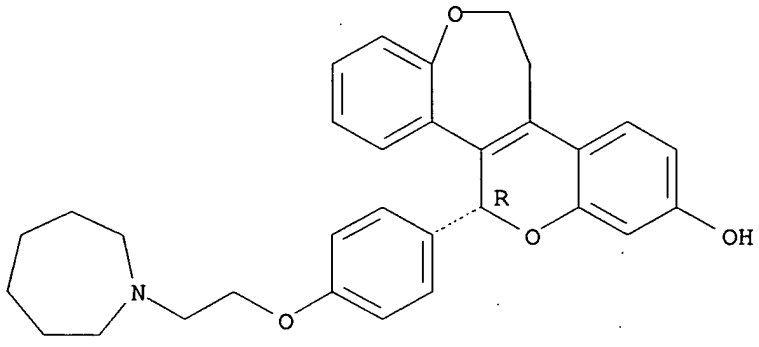


RN 554431-39-9 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



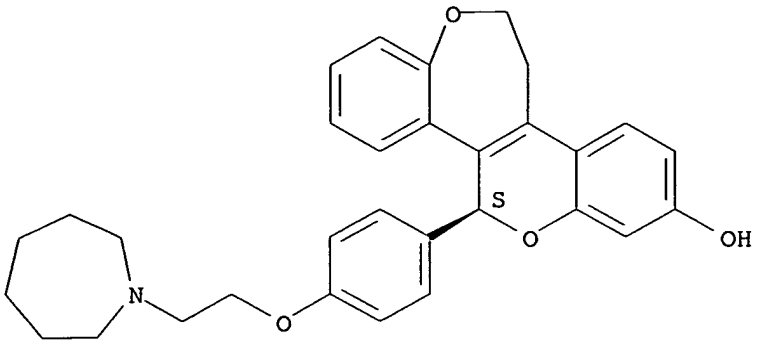
RN 554431-40-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

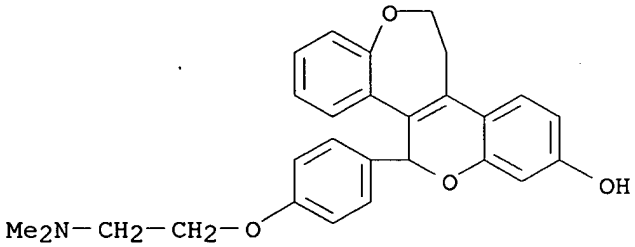


RN 554431-41-3 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

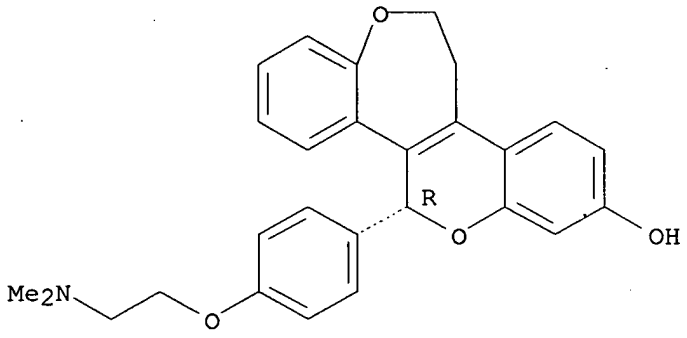


RN 554431-42-4 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



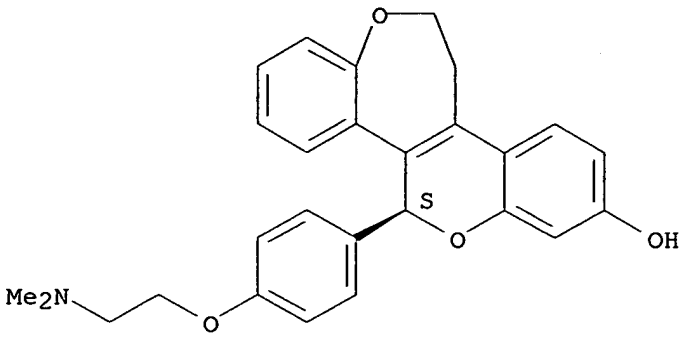
RN 554431-43-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

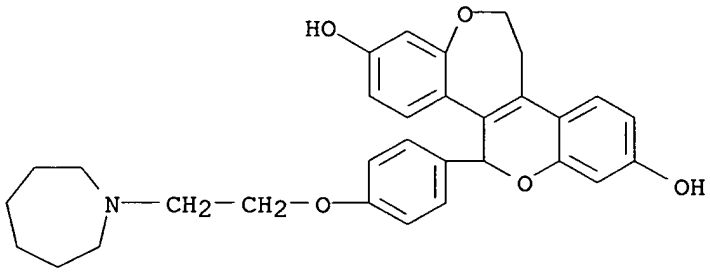


RN 554431-44-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

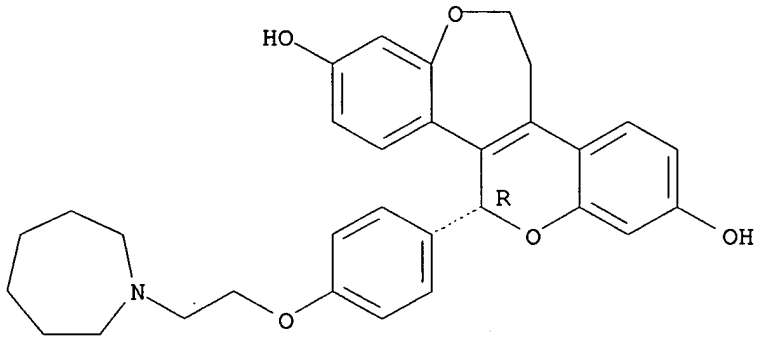


RN 554431-45-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



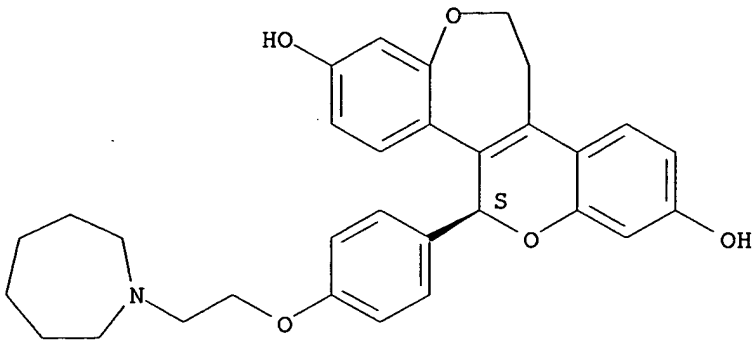
RN 554431-46-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

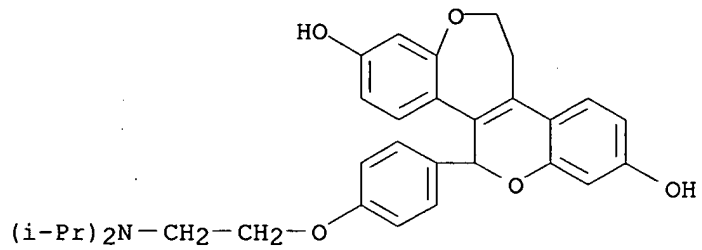


RN 554431-47-9 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

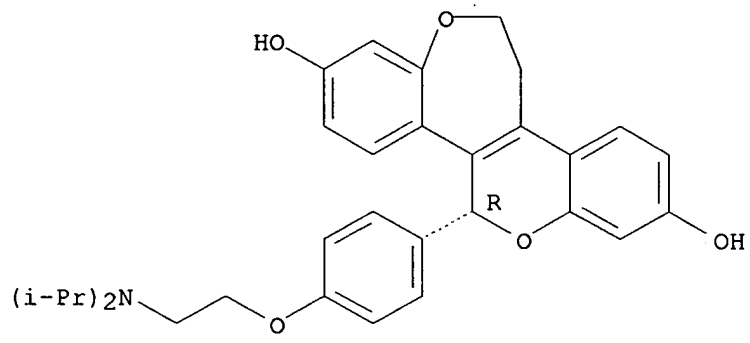


RN 554431-48-0 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-[bis(1-methylethyl)amino]ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



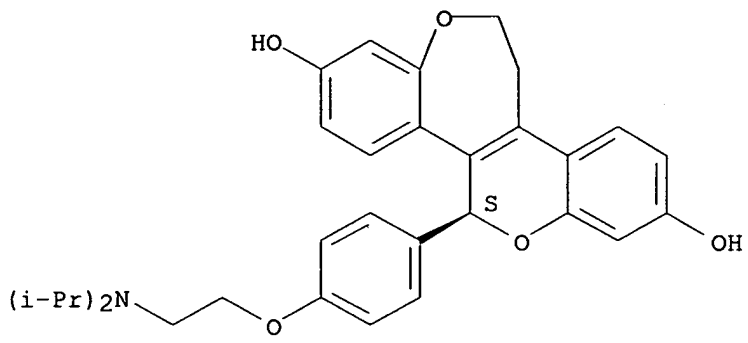
RN 554431-49-1 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-[bis(1-methylethyl)amino]ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

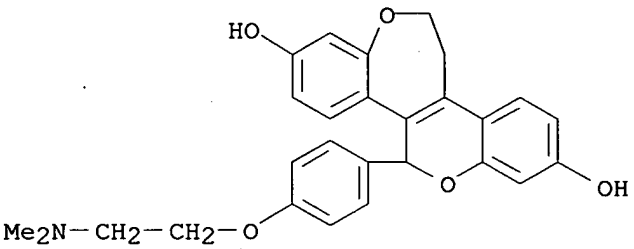


RN 554431-50-4 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-[bis(1-methylethyl)amino]ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

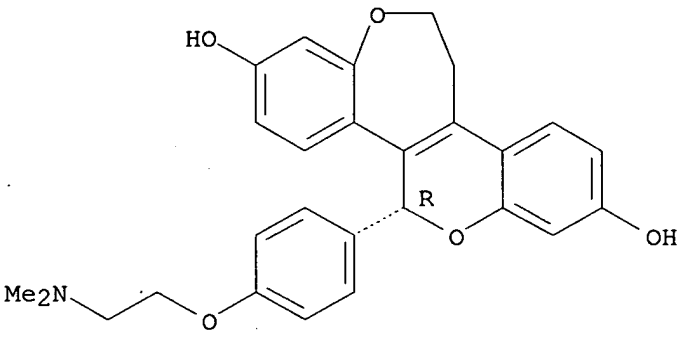


RN 554431-51-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro- (9CI) (CA INDEX NAME)



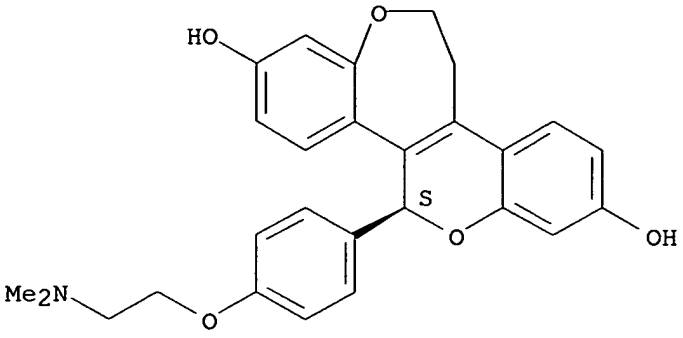
RN 554431-52-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

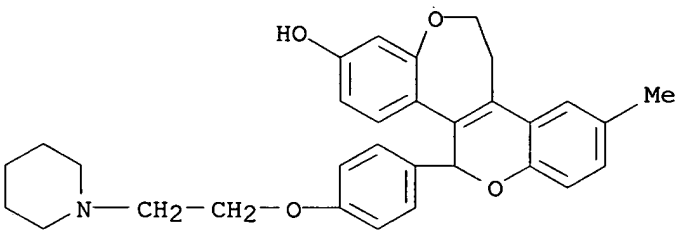


RN 554431-53-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 5-[4-[2-(dimethylamino)ethoxy]phenyl]-11,12-dihydro-, (5S)- (9CI) (CA INDEX NAME)

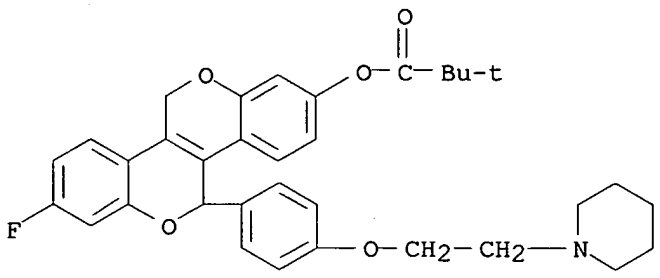
Absolute stereochemistry. Rotation (-).



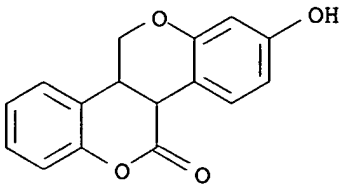
RN 554431-54-8 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 11,12-dihydro-9-methyl-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



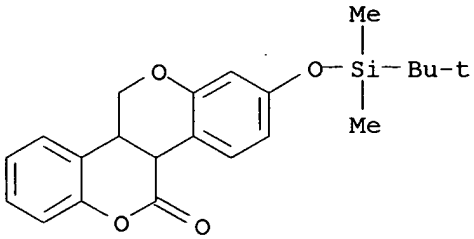
RN 554431-55-9 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 8-fluoro-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)



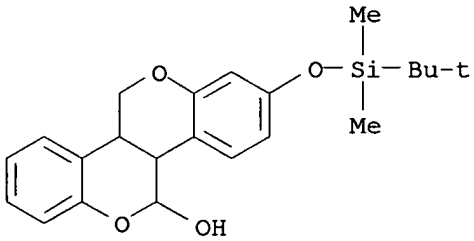
RN 554431-56-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(4bH)-one, 10b,11-dihydro-2-hydroxy- (9CI) (CA INDEX NAME)



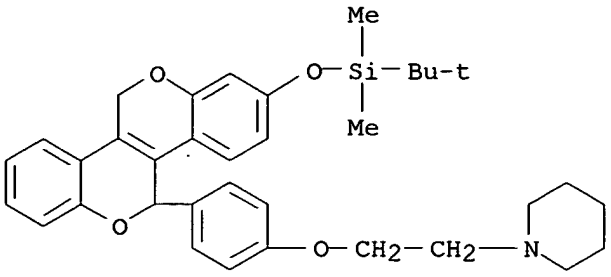
RN 554431-57-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(4bH)-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-10b,11-dihydro- (9CI) (CA INDEX NAME)



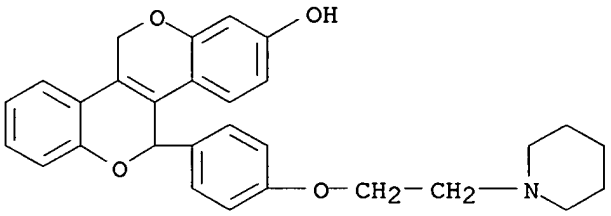
RN 554431-58-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-4b,5,10b,11-tetrahydro- (9CI) (CA INDEX NAME)



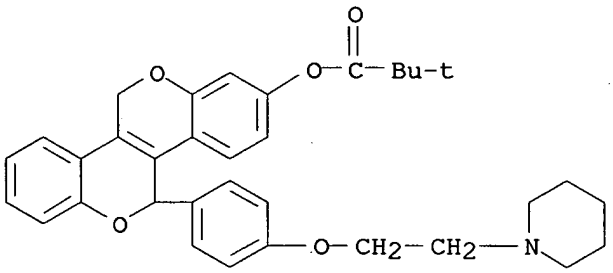
RN 554431-59-3 CAPLUS
CN Piperidine, 1-[2-[4-[2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



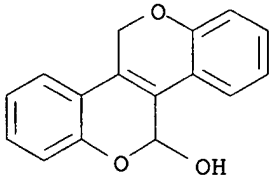
RN 554431-60-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



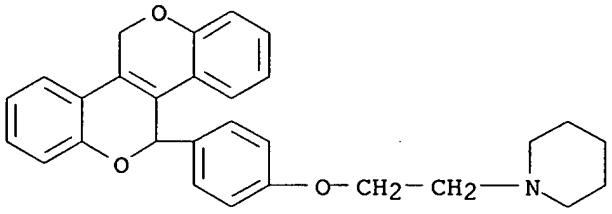
RN 554431-61-7 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, 5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)



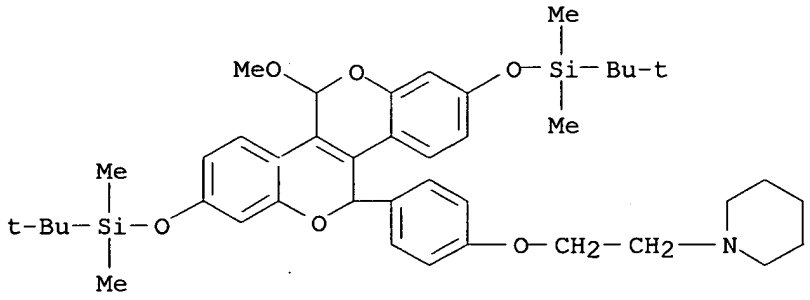
RN 554431-62-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ol, 5,11-dihydro- (9CI) (CA INDEX NAME)



RN 554431-63-9 CAPLUS
CN Piperidine, 1-[2-[4-(5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl)phenoxy]ethyl]- (9CI) (CA INDEX NAME)

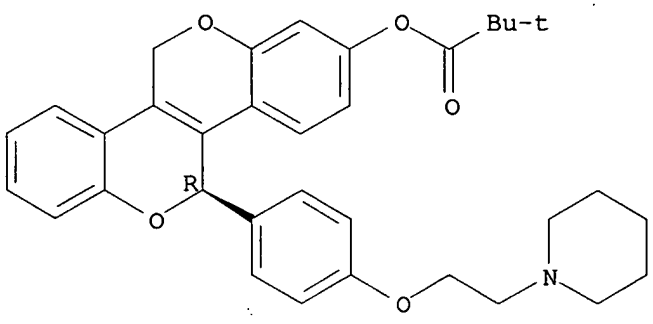


RN 554431-64-0 CAPLUS
CN Piperidine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro-11-methoxy[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



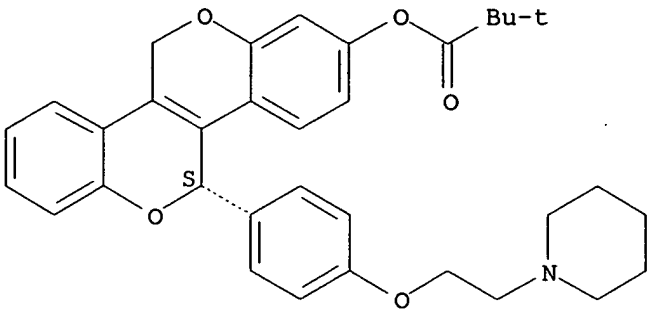
RN 554431-65-1 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5R)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



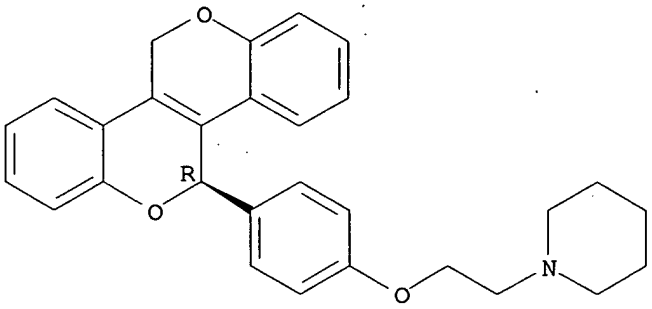
RN 554431-66-2 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5S)-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

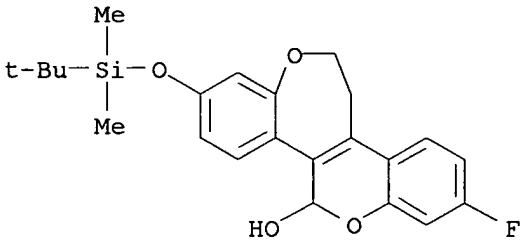


RN 554431-67-3 CAPLUS
CN Piperidine, 1-[2-[4-[(5R)-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

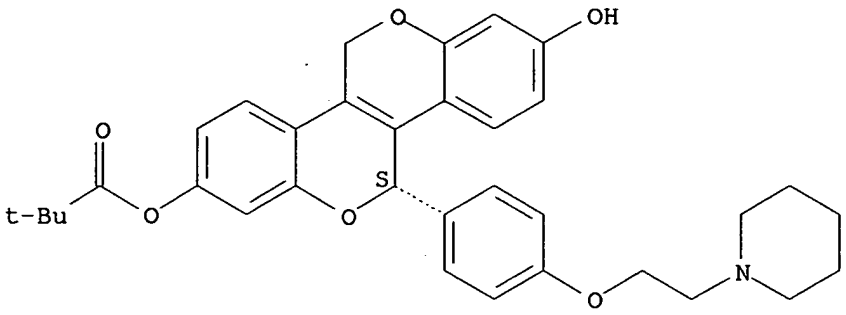


RN 554431-68-4 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro-11,12-dihydro- (9CI) (CA INDEX NAME)



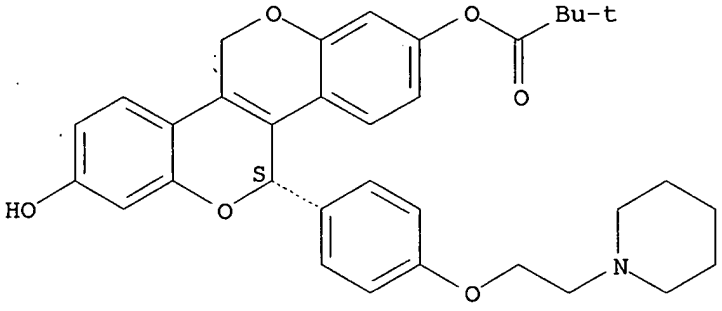
RN 554431-69-5 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (11S)-5,11-dihydro-8-hydroxy-11-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



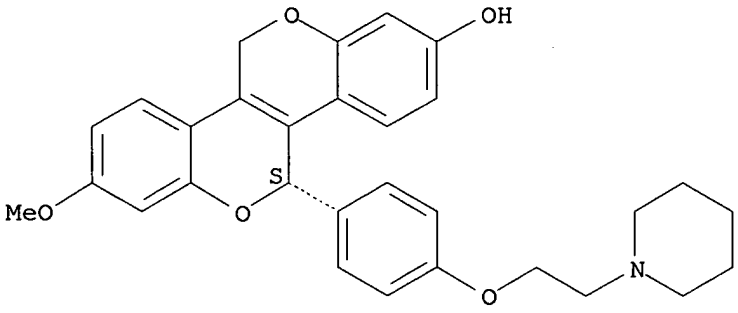
RN 554431-70-8 CAPLUS
CN Propanoic acid, 2,2-dimethyl-, (5S)-5,11-dihydro-8-hydroxy-5-[4-[3-(1-piperidinyl)propoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



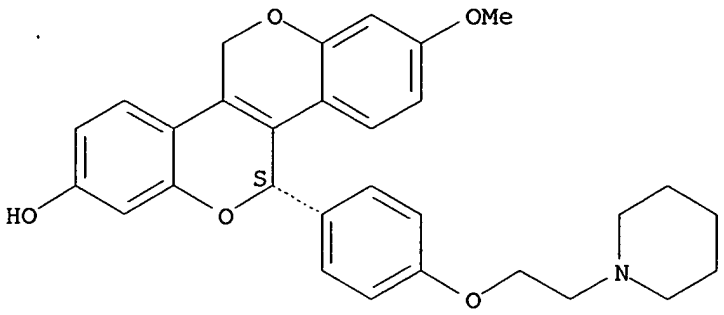
RN 554431-71-9 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 5,11-dihydro-8-methoxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



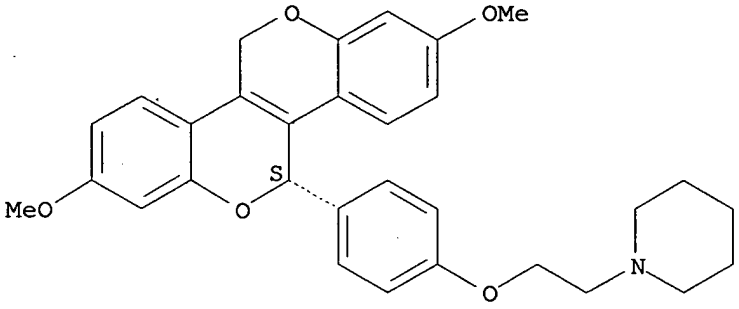
RN 554431-72-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 5,11-dihydro-8-methoxy-11-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (11S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



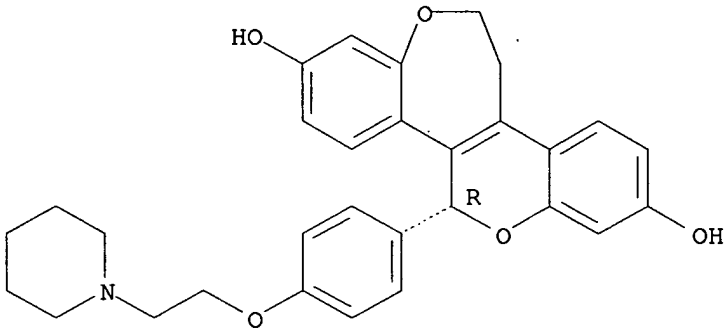
RN 554431-73-1 CAPLUS
CN Piperidine, 1-[2-[4-[(5S)-5,11-dihydro-2,8-dimethoxy[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



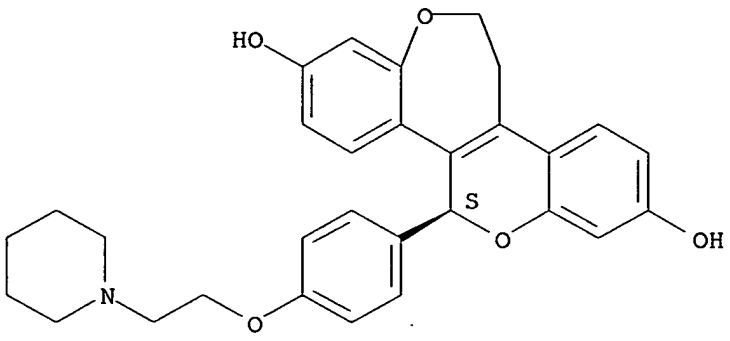
RN 554431-74-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 11,12-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



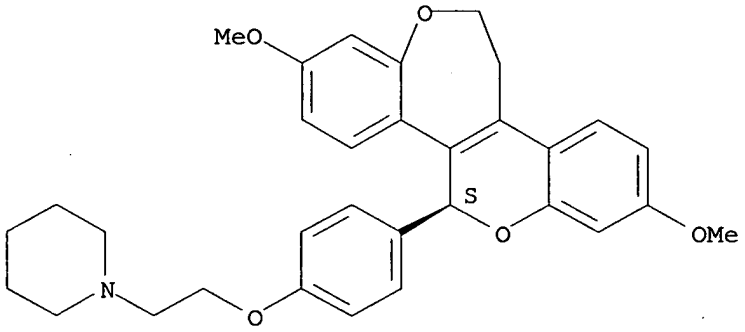
RN 554431-75-3 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2,8-diol, 11,12-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



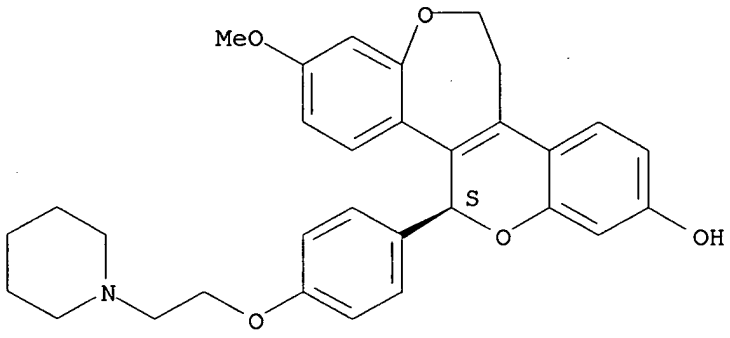
RN 554431-76-4 CAPLUS
CN Piperidine, 1-[2-[4-[(5S)-11,12-dihydro-2,8-dimethoxy-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



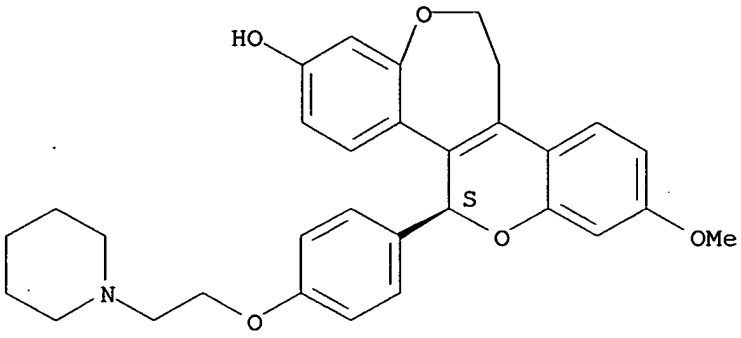
RN 554431-77-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-8-ol, 11,12-dihydro-2-methoxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

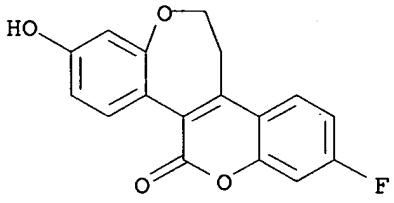


RN 554431-78-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-2-ol, 11,12-dihydro-8-methoxy-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (5S)- (9CI) (CA INDEX NAME)

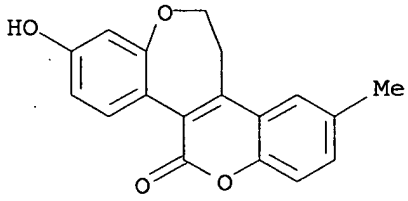
Absolute stereochemistry. Rotation (-).



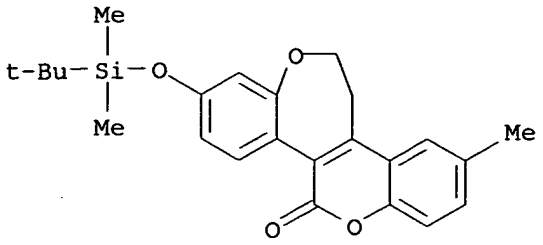
RN 554431-79-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 8-fluoro-11,12-dihydro-2-hydroxy- (9CI) (CA INDEX NAME)



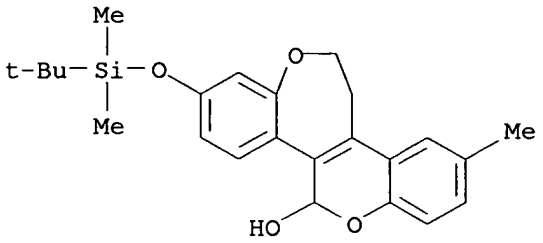
RN 554431-80-0 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 11,12-dihydro-2-hydroxy-9-methyl- (9CI) (CA INDEX NAME)



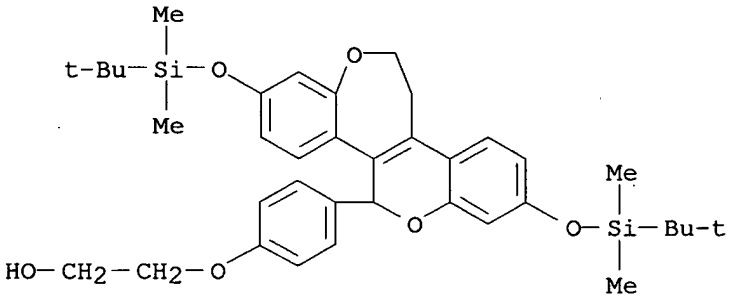
RN 554431-81-1 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-9-methyl- (9CI) (CA INDEX NAME)



RN 554431-82-2 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-9-methyl- (9CI) (CA INDEX NAME)

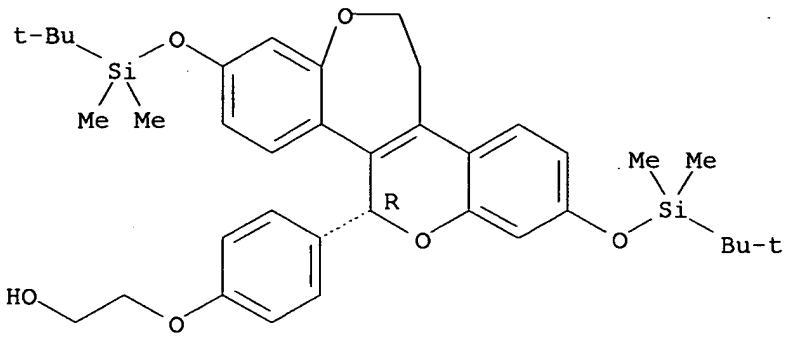


RN 554431-83-3 CAPLUS
CN Ethanol, 2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)



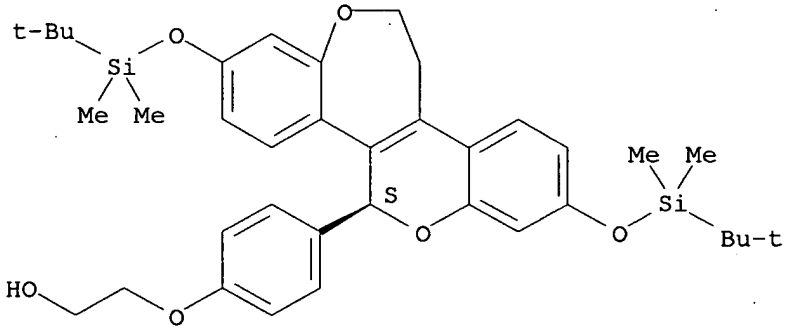
RN 554431-84-4 CAPLUS
CN Ethanol, 2-[4-[(5R)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



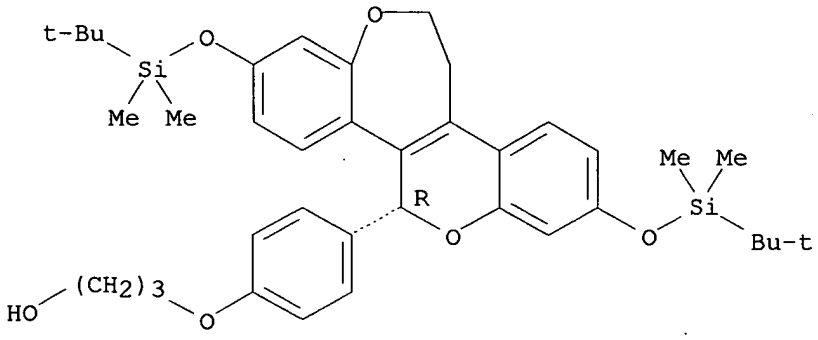
RN 554431-85-5 CAPLUS
CN Ethanol, 2-[4-[(5S)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 554431-86-6 CAPLUS
CN 1-Propanol, 3-[4-[(5R)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

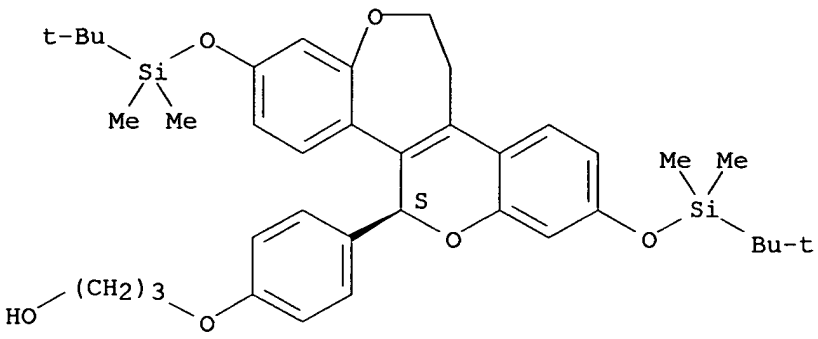
Absolute stereochemistry. Rotation (+).



RN 554431-87-7 CAPLUS

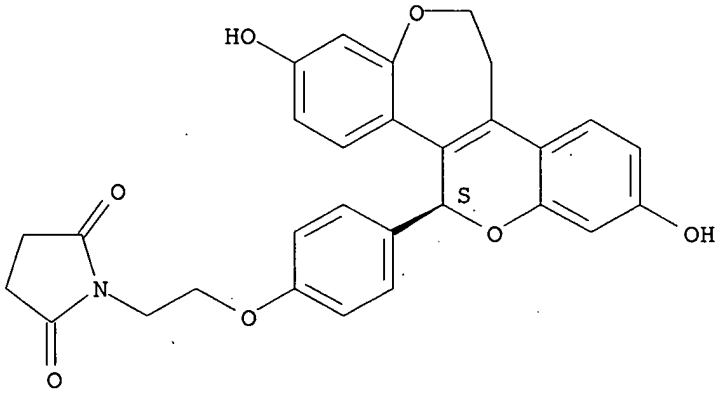
CN 1-Propanol, 3-[4-[(5S)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



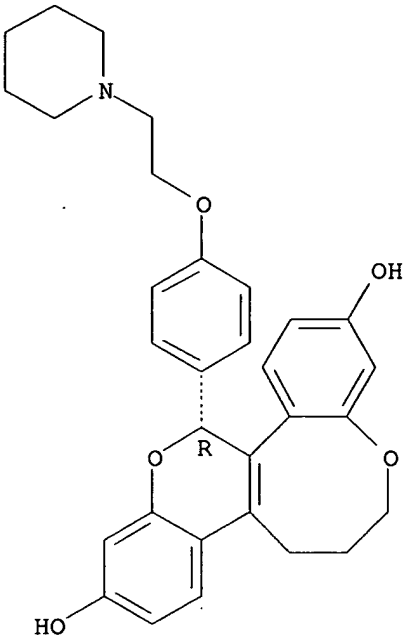
RN 554431-88-8 CAPLUS
CN 2,5-Pyrrolidinedione, 1-[2-[4-[(5S)-11,12-dihydro-2,8-dihydroxy-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



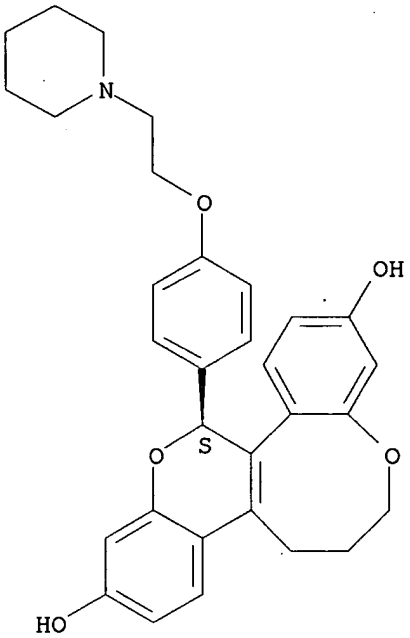
RN 554431-92-4 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-2,10-diol, 5,6,7,13-tetrahydro-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (13R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



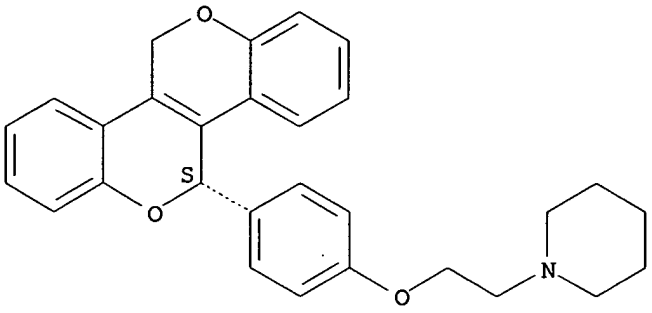
RN 554431-93-5 CAPLUS
CN [1]Benzopyrano[4,3-e][1]benzoxocin-2,10-diol, 5,6,7,13-tetrahydro-13-[4-[2-(1-piperidinyl)ethoxy]phenyl]-, (13S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

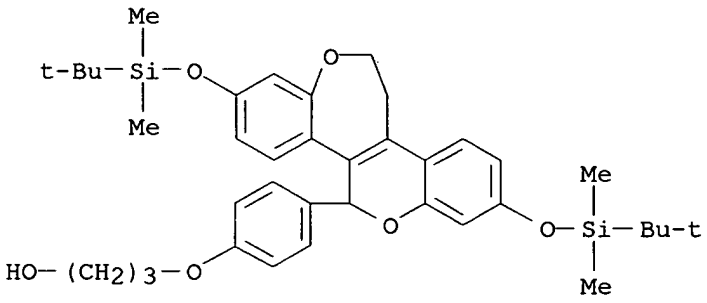


RN 554433-05-5 CAPLUS
CN Piperidine, 1-[2-[4-[(5S)-5,11-dihydro[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

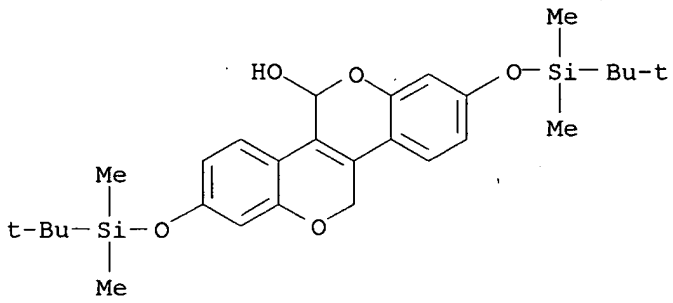
Absolute stereochemistry. Rotation (+).



RN 554433-06-6 CAPLUS
CN 1-Propanol, 3-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]- (9CI) (CA INDEX NAME)

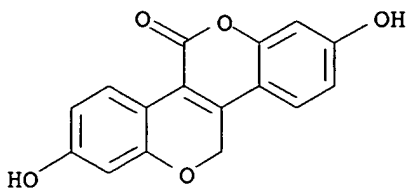


IT **553681-47-3 554430-69-2 554430-70-5**
554430-71-6 554430-72-7 554430-73-8
554430-74-9 554430-75-0 554430-77-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs))
RN 553681-47-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro- (9CI) (CA INDEX NAME)

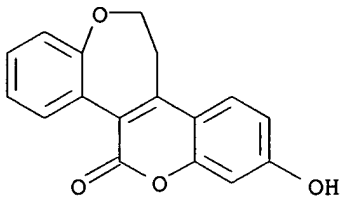


RN 554430-69-2 CAPLUS

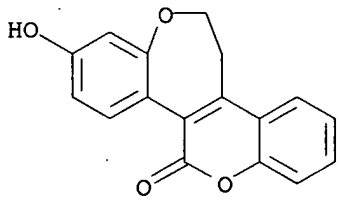
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 2,8-dihydroxy- (9CI) (CA INDEX NAME)



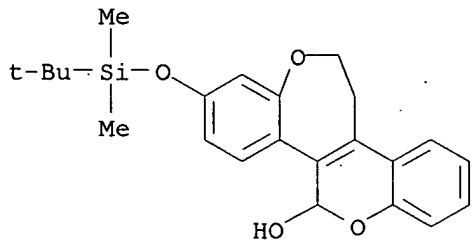
RN 554430-70-5 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 11,12-dihydro-8-hydroxy- (9CI) (CA INDEX NAME)



RN 554430-71-6 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 11,12-dihydro-2-hydroxy- (9CI) (CA INDEX NAME)

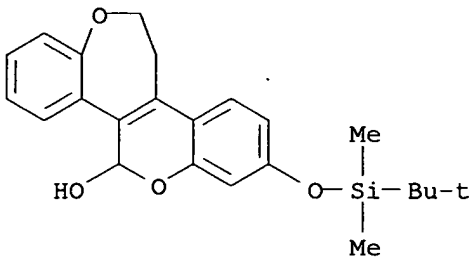


RN 554430-72-7 CAPLUS
CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



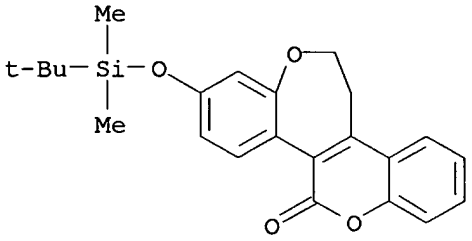
RN 554430-73-8 CAPLUS

CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-ol, 8-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



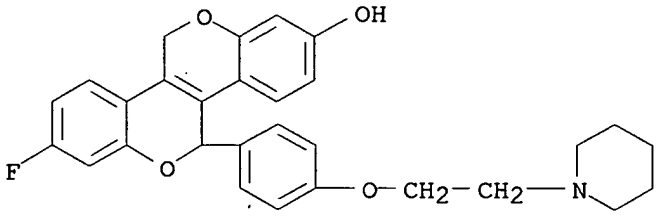
RN 554430-74-9 CAPLUS

CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



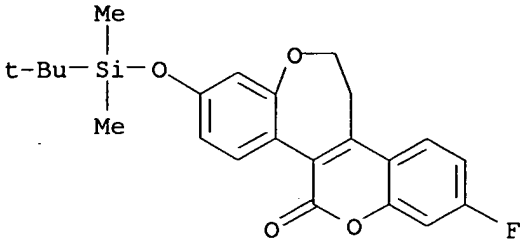
RN 554430-75-0 CAPLUS

CN [1]Benzopyrano[4,3-c][1]benzopyran-2-ol, 8-fluoro-5,11-dihydro-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



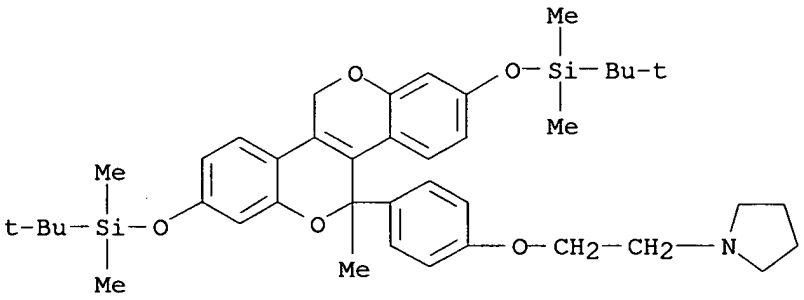
RN 554430-77-2 CAPLUS

CN 5H-[1]Benzopyrano[4,3-d][1]benzoxepin-5-one, 2-[[(1,1-dimethylethyl)dimethylsilyl]oxy]-8-fluoro-11,12-dihydro- (9CI) (CA INDEX NAME)

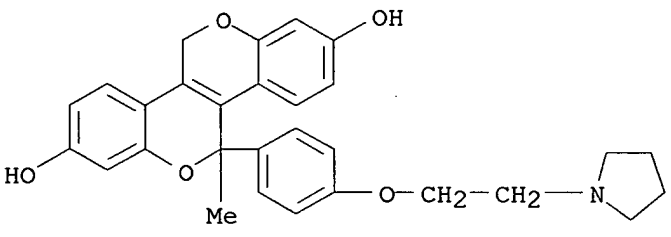


IT **554430-22-7P 554430-23-8P 554430-25-0P**
554430-26-1P 554430-28-3P 554430-29-4P
554430-31-8P 554430-32-9P 554430-34-1P
554430-35-2P 554430-50-1P 554430-51-2P
554430-52-3P 554431-90-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of tetracyclic heterocycles as selective estrogen receptor modulators (SERMs))

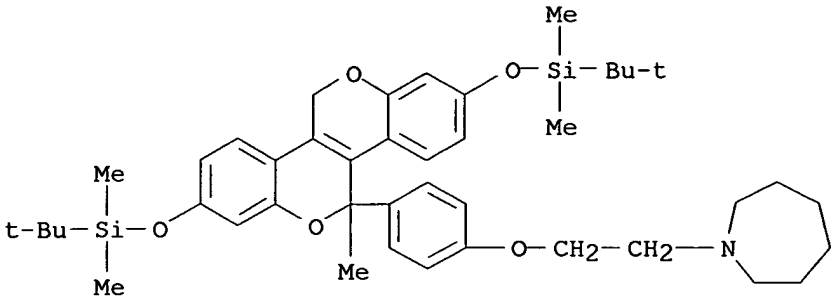
RN 554430-22-7 CAPLUS
CN Silane, [[5,11-dihydro-5-methyl-5-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



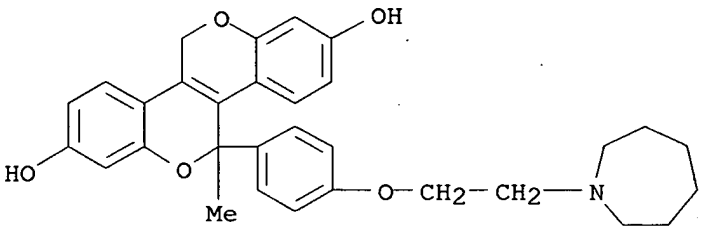
RN 554430-23-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-methyl-5-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



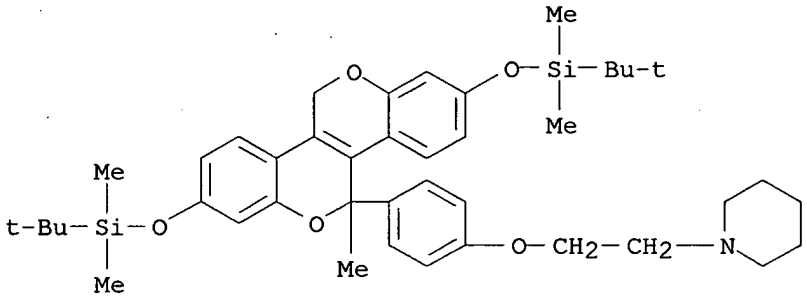
RN 554430-25-0 CAPLUS
CN Silane, [[5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-5,11-dihydro-5-methyl[1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



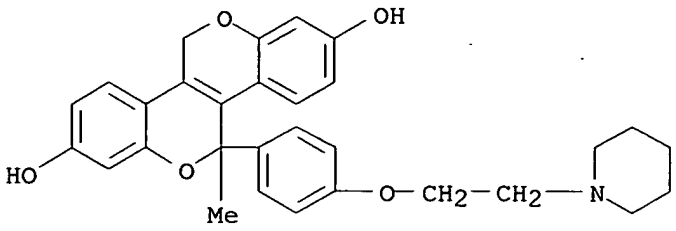
RN 554430-26-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5-[4-[2-(hexahydro-1H-azepin-1-yl)ethoxy]phenyl]-5,11-dihydro-5-methyl- (9CI) (CA INDEX NAME)



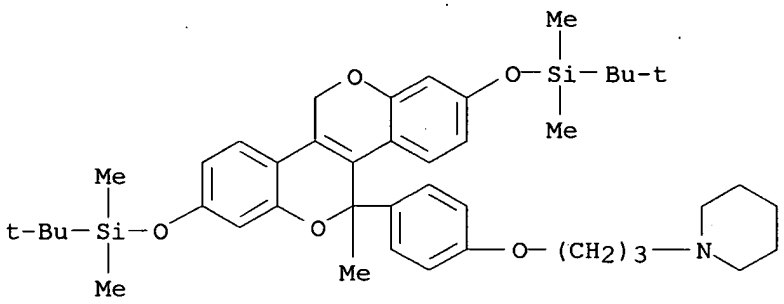
RN 554430-28-3 CAPLUS
CN Silane, [[5,11-dihydro-5-methyl-5-[4-[2-(1-piperidinyl)ethoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



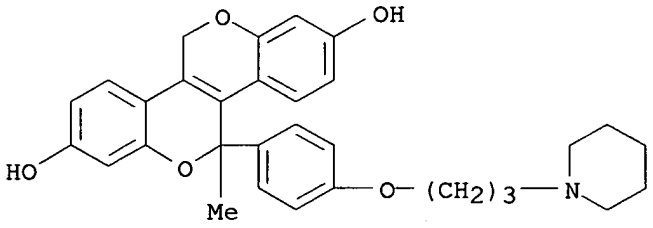
RN 554430-29-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-methyl-5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



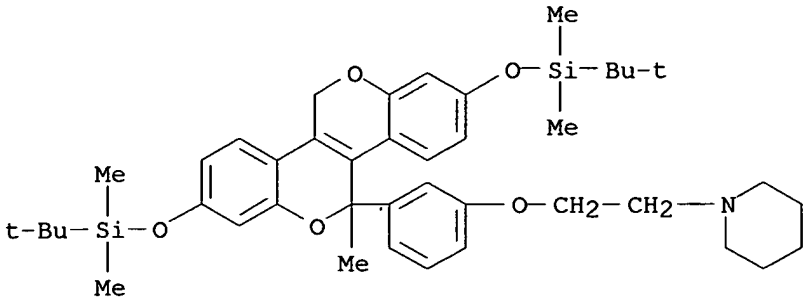
RN 554430-31-8 CAPLUS
CN Silane, [[5,11-dihydro-5-methyl-5-[4-[3-(1-piperidinyl)propoxy]phenyl][1]benzopyrano[4,3-c][1]benzopyran-2,8-diyl]bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



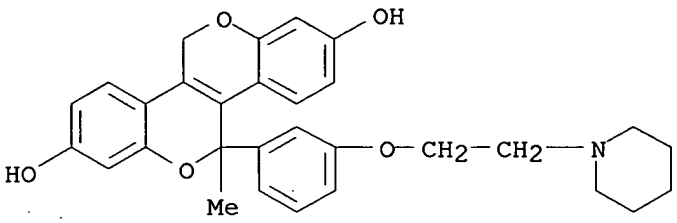
RN 554430-32-9 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-methyl-5-[4-[3-(1-piperidinyl)propoxy]phenyl]- (9CI) (CA INDEX NAME)



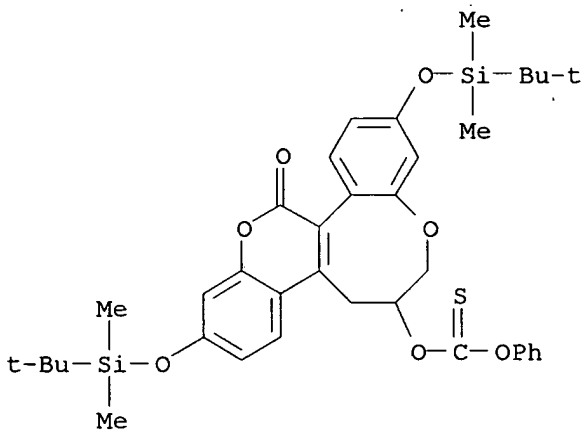
RN 554430-34-1 CAPLUS
CN Piperidine, 1-[2-[3-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro-5-methyl[1]benzopyrano[4,3-c][1]benzopyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



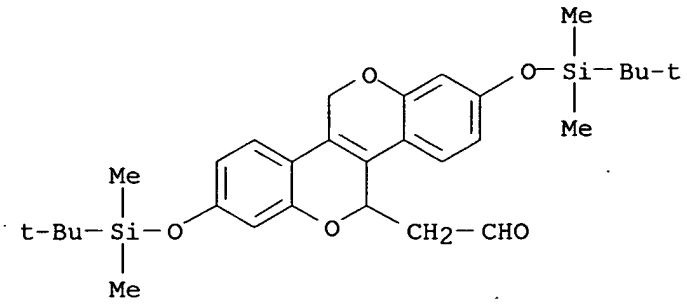
RN 554430-35-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-2,8-diol, 5,11-dihydro-5-methyl-5-[3-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



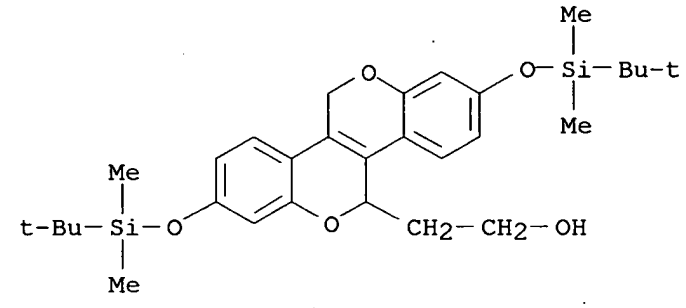
RN 554430-50-1 CAPLUS
CN Carbonothioic acid, O-[2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,6,7,13-tetrahydro-13-oxo[1]benzopyrano[4,3-e][1]benzoxocin-6-yl] O-phenyl ester (9CI) (CA INDEX NAME)



RN 554430-51-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-acetaldehyde, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro- (9CI) (CA INDEX NAME)

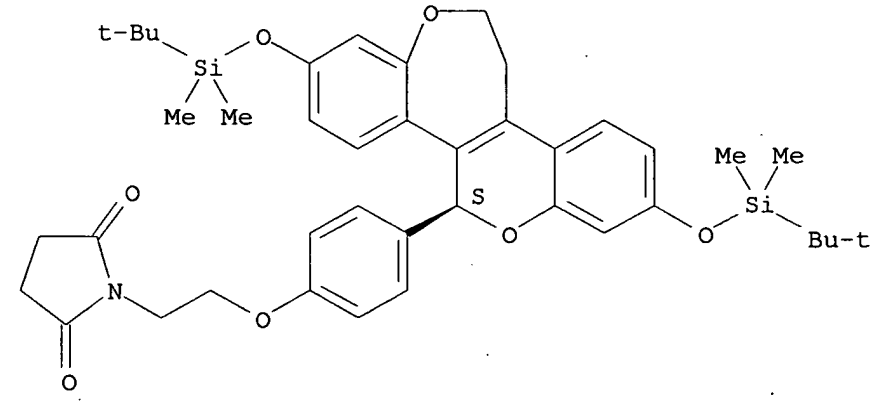


RN 554430-52-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5-ethanol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,11-dihydro- (9CI) (CA INDEX NAME)



RN 554431-90-2 CAPLUS
CN 2,5-Pyrrolidinedione, 1-[2-[4-[(5S)-2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro-5H-[1]benzopyrano[4,3-d][1]benzoxepin-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



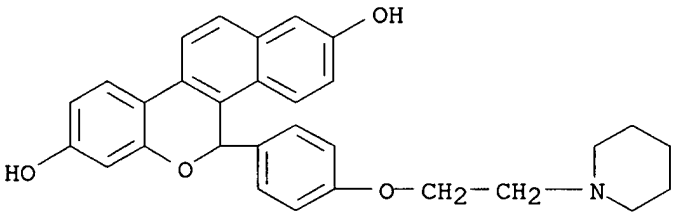
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 11 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:498000 CAPLUS
DOCUMENT NUMBER: 139:176251
TITLE: BHB: A simple knowledge-based scoring function to improve the efficiency of database screening
AUTHOR(S): Feher, Miklos; Deretey, Eugen; Roy, Samir
CORPORATE SOURCE: SignalGene Inc., Guelph, ON, N1G 4P7, Can.
SOURCE: Journal of Chemical Information and Computer Sciences (2003), 43(4), 1316-1327
CODEN: JCISD8; ISSN: 0095-2338
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new knowledge-based scoring function was developed in this work to facilitate the rapid ranking of ligands in databases. The acronym of the method is BHB based on the descriptors it utilizes:buriedness, hydrogen bonding, and binding energy. Receptor buriedness is a measure of how well mols. occupy the binding pocket in comparison to known high-affinity ligands or, alternatively, whether they have contact with identified residues in the pocket. The possibility of hydrogen bond formation is checked for selected residues that are recognized as being important in the binding of known ligands. The approx. binding energy is calculated from the thermodn. cycle using the optimized bound and free solvent conformations of the ligand-receptor system. The information necessary for the scoring function can ideally be gleaned from the 3D structure of the receptor-ligand complex. Alternatively, the descriptors can be derived from the 3D structure of the unbound receptor, provided this receptor has a known ligand that binds to the given site with nanomolar activity. We show that the new scoring functions provide up to 12 times improvement in enrichment compared to the popular com. docking program GOLD.

IT **188824-17-1**, LY-357489
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(BHB knowledge-based scoring function to improve the efficiency of database screening)

RN 188824-17-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



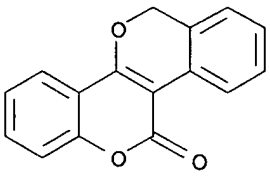
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 12 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:192085 CAPLUS
DOCUMENT NUMBER: 139:52971
TITLE: Regioselective synthesis of 1H,3H,6H[2]benzopyrano[4,3-d]pyrimidine-2,4-diones and 12H-benzopyrano[3,2-c][1]benzopyran-5-ones by radical cyclization
AUTHOR(S): Majumdar, K. C.; Basu, P. K.; Mukhopadhyay, P. P.; Sarkar, S.; Ghosh, S. K.; Biswas, P.
CORPORATE SOURCE: Department of Chemistry, University of Kalyani, Kalyani, 741 235, India
SOURCE: Tetrahedron (2003), 59(12), 2151-2157
CODEN: TETRAB; ISSN: 0040-4020
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:52971

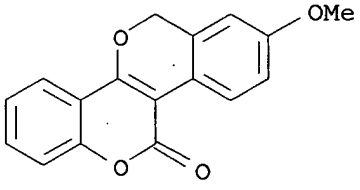
AB 5-Hydroxy uracils or 4-hydroxy[1]benzopyran-2-ones were refluxed with 2-bromobenzyl bromides in acetone in the presence of anhydrous potassium carbonate to afford a number of 5-(2'-bromobenzyloxy) pyrimidine-2,4-dione (80-92%) or 4-(2'-bromobenzyloxy) benzopyran-7-ones (70-82%) resp. These were then refluxed with tri-n-butyltin chloride and sodium cyanoborohydride in the presence of a catalytic amount of azobisisobutyronitrile (AIBN) for 3-4 h to give 1H,3H,6H [2]benzopyrano[4,3-d]pyrimidine-2,4-diones (75-85%) or 12H-benzopyrano[3,2-c][1]benzopyran-5-ones (70-85%) resp.

IT **96600-94-1P 545402-65-1P 545402-66-2P 545402-67-3P 545402-68-4P 545402-69-5P 545402-70-8P 545402-71-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(regioselective preparation of 1H,3H,6H[2]benzopyrano[4,3-d]pyrimidine-2,4-diones and 12H-benzopyrano[3,2-c][1]benzopyran-5-ones)

RN 96600-94-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one (9CI) (CA INDEX NAME)

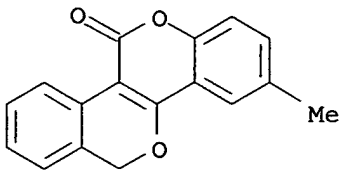


RN 545402-65-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 8-methoxy- (9CI) (CA INDEX NAME)

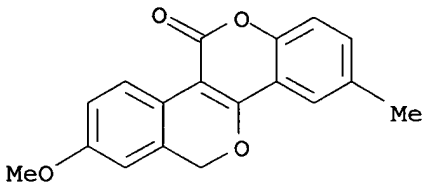


RN 545402-66-2 CAPLUS

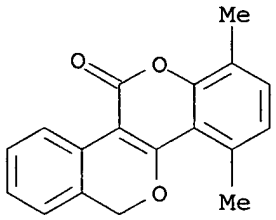
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 3-methyl- (9CI) (CA INDEX NAME)



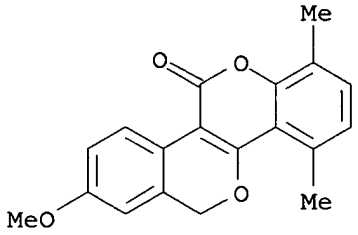
RN 545402-67-3 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 8-methoxy-3-methyl- (9CI) (CA INDEX NAME)



RN 545402-68-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 1,4-dimethyl- (9CI) (CA INDEX NAME)

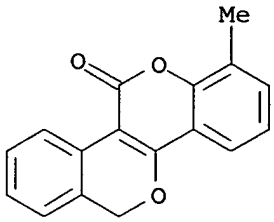


RN 545402-69-5 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 8-methoxy-1,4-dimethyl- (9CI) (CA INDEX NAME)

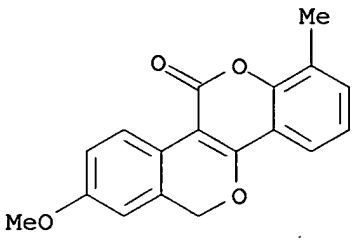


RN 545402-70-8 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 1-methyl- (9CI) (CA

INDEX NAME)



RN 545402-71-9 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 8-methoxy-1-methyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 13 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:940242 CAPLUS
DOCUMENT NUMBER: 137:380017
TITLE: Estrogen receptor β-based hypertension treatment and assay
INVENTOR(S): Gustafsson, Jan-Ake; Bian, Zhao
PATENT ASSIGNEE(S): Karo Bio AB, Swed.
SOURCE: Brit. UK Pat. Appl., 28 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

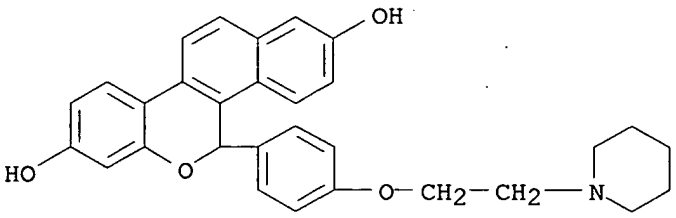
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2374412	A1	20021016	GB 2001-9091	20010411

PRIORITY APPLN. INFO.: GB 2001-9091 20010411

AB Methods are disclosed for assaying compds. for blood pressure-modulating activity. The methods include determining the ability of the compound to affect estrogen receptor β (ERβ) activity. The invention also discloses the use of ERβ-modulating compds. for modulating blood pressure, in particular for treating hypertension.

IT **188824-17-1**, LY-357489
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(estrogen receptor β-based hypertension treatment and assay)

RN 188824-17-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

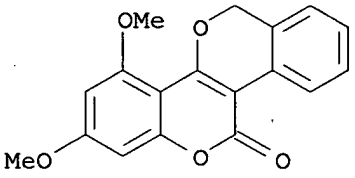


L2 ANSWER 14 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:808688 CAPLUS
DOCUMENT NUMBER: 138:237974
TITLE: Three-step one-pot organobismuth-mediated synthesis of benzo[b]pyran compounds
AUTHOR(S): Bolshakov, Alexey V.; Ganina, Olga G.; Shavirin, Andrew S.; Kurskii, Yury A.; Finet, Jean-Pierre; Fedorov, Alexey Yu.
CORPORATE SOURCE: Department of Organic Chemistry, Nizhny Novgorod State University, Nizhny Novgorod, 603950, Russia
SOURCE: Tetrahedron Letters (2002), 43(46), 8245-8248
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:237974

AB Tris[o-chloromethylphenyl]bismuth diacetate reacted with phenols and enolizable substrates in the presence of a base to afford good yields of oxaphenanthrene derivs. This bismuth-mediated oxidation/o-arylation/cyclization sequence for the synthesis of the dibenzo[b,d]pyran derivs. proved equal or even superior in terms of yield, but is environmentally friendly.

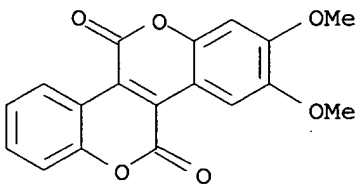
IT **374551-18-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of dibenzo[b,d]pyrans by oxidation/o-arylation/cyclization of phenols with tris[o-chloromethylphenyl]bismuth diacetate)

RN 374551-18-5 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 2,4-dimethoxy- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 15 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:767253 CAPLUS
DOCUMENT NUMBER: 138:205032
TITLE: A photochemical route to dibenzonaphthyrones
AUTHOR(S): Jackson, Yvette A.; Marriott, Karla-Sue C.
CORPORATE SOURCE: Department of Chemistry, University of the West Indies, Kingston, 7, Antigua and Barbuda
SOURCE: Heterocycles (2002), 57(10), 1897-1900
CODEN: HTCYAM; ISSN: 0385-5414
PUBLISHER: Japan Institute of Heterocyclic Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:205032
AB 2,3-Dimethoxybenzopyrano[4,3-c]benzopyran-5,11-dione was prepared via photochem. rearrangement of 2-Me 3-Ph 5,6-dimethoxy-1-benzofuran-2,3-dicarboxylate which was synthesized via a multistep route.
IT **500003-10-1P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and spectra of dimethoxybenzopyranobenzopyrandione from photochem. rearrangement of dimethoxybenzopyranobenzopyrandione)
RN 500003-10-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 2,3-dimethoxy- (9CI) (CA INDEX NAME)



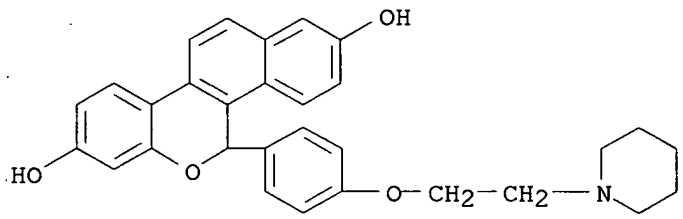
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L82 ANSWER 16 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:210373 CAPLUS
DOCUMENT NUMBER: 137:87830
TITLE: Molecular simulation of interaction between estrogen receptor and selective estrogen receptor modulators
AUTHOR(S): Guo, Zong-Ru; Yi, Xiang; Xu, Zhi-Bin
CORPORATE SOURCE: Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, 100050, Peop. Rep. China
SOURCE: Acta Pharmacologica Sinica (2002), 23(3), 208-212
CODEN: APSCG5; ISSN: 1671-4083
PUBLISHER: Science Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Aim: To study the mechanism of interaction between a series of potent racemic selective estrogen receptor modulators (SERM) and estrogen receptors (ER). Methods: Active conformations of these conformationally restricted raloxifene analogs in binding pocket were determined by mol. mechanics. The interactive energies between ligand and receptor were calculated by docking program. Results: Both R and S configurations of these SERM were accommodated by the binding pocket of ER. The hydroxy group of compds. forms hydrogen bonds with amino acid residues of ER and the phenolic group mimics the A-ring of estradiol. The most potential compds. were those with two hydroxy groups and accommodated by binding pocket in S configuration with phenolic group at C(16) imitating A-ring of estradiol. Conclusion: Chiral center conferred little effect on the binding affinity of these conformationally restricted raloxifene analogs. The hydroxy group(s) play(s) a critical role to the orientation of compds. in active pocket of ER and the binding between ligand and receptor.

IT **188824-17-1**
RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(mol. simulation of estrogen receptor interaction with estrogen receptor modulators)

RN 188824-17-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

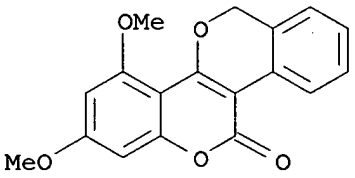


REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 17 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:557693 CAPLUS
DOCUMENT NUMBER: 135:371601
TITLE: Aryllead triacetates in the synthesis of oxaphenanthrene derivatives
AUTHOR(S): Fedorov, A. Y.; Carrara, F.; Finet, J.-P.
CORPORATE SOURCE: Faculte des Sciences, Biologie et Radicaux Libres, Laboratoire Chimie, UMR 6517, CNRS-Universites d'Aix-Marseille, Saint-Jerome, Marseille, 13397, Fr.
SOURCE: Tetrahedron Letters (2001), 42(34), 5875-5877
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:371601

AB Ortho-Halomethylphenyl-Pb(AcO)3 (halo = Br, Cl) react with phenols in the presence of NEt3 and a Py derivative to afford modest to good yields of dibenzo[b,d]-6H-pyrans.

IT **374551-18-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of oxaphenanthrene derivs. by aryllead triacetate-mediated ortho-arylation-cyclization)
RN 374551-18-5 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 2,4-dimethoxy- (9CI) (CA INDEX NAME)



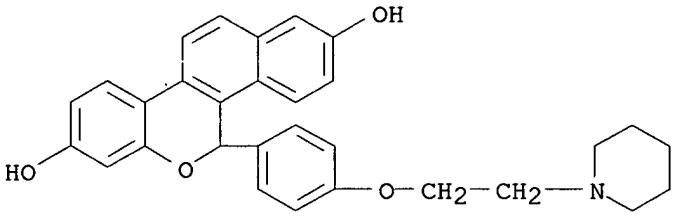
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 18 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:818588 CAPLUS
DOCUMENT NUMBER: 134:125545
TITLE: Protein-Based Virtual Screening of Chemical Databases. 1. Evaluation of Different Docking/Scoring Combinations
AUTHOR(S): Bissantz, Caterina; Folkers, Gerd; Rognan, Didier
CORPORATE SOURCE: Department of Applied Biosciences, ETH Zuerich, Zurich, CH-8057, Switz.
SOURCE: Journal of Medicinal Chemistry (2000), 43(25), 4759-4767
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Three different database docking programs (Dock, FlexX, Gold) have been used in combination with seven scoring functions (Chemscore, Dock, FlexX, Fresno, Gold, Pmf, Score) to assess the accuracy of virtual screening methods against two protein targets (thymidine kinase, estrogen receptor) of known three-dimensional structure. For both targets, it was generally possible to discriminate about 7 out of 10 true hits from a random database of 990 ligands. The use of consensus lists common to two or three scoring functions clearly enhances hit rates among the top 5% scorers from 10% (single scoring) to 25-40% (double scoring) and up to 65-70% (triple scoring). However, in all tested cases, no clear relationships could be found between docking and ranking accuracies. Moreover, predicting the absolute binding free energy of true hits was not possible whatever docking accuracy was achieved and scoring function used. As the best docking/consensus scoring combination varies with the selected target and the physicochem. of target-ligand interactions, we propose a two-step protocol for screening large databases: (i) screening of a reduced dataset containing a few known ligands for deriving the optimal docking/consensus scoring scheme, (ii) applying the latter parameters to the screening of the entire database.

IT **188824-17-1**, LY 357489
RL: PRP (Properties)
(accuracy of virtual screening methods against protein targets of known structure)

RN 188824-17-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

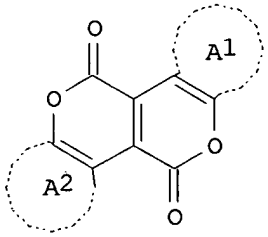
L22 ANSWER 19 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:672817 CAPLUS
DOCUMENT NUMBER: 131:300577
TITLE: Dibenzonaphthyrones, their preparation and use for coloring/pigmenting high-molecular-weight organic material
INVENTOR(S): Nesvadba, Peter; Jandke, Joachim
PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.
SOURCE: PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9952909	A2	19991021	WO 1999-EP2139	19990329
WO 9952909	A3	20000113		
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9935218	A1	19991101	AU 1999-35218	19990329
BR 9909461	A	20001212	BR 1999-9461	19990329
EP 1095041	A2	20010502	EP 1999-916896	19990329
R: CH, DE, FR, GB, IT, LI				
US 6281361	B1	20010828	US 1999-280738	19990329
JP 2002511498	T2	20020416	JP 2000-543466	19990329
CN 1125072	B	20031022	CN 1999-804890	19990329
US 2002095046	A1	20020718	US 2001-880211	20010613
US 6533825	B2	20030318		

PRIORITY APPLN. INFO.:

CH 1998-838	A	19980408
CH 1998-1861	A	19980911
US 1999-280738	A3	19990329
WO 1999-EP2139	W	19990329

OTHER SOURCE(S): MARPAT 131:300577
GI

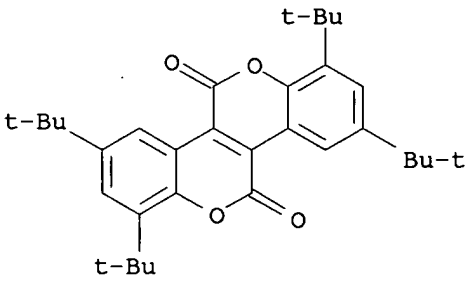


I

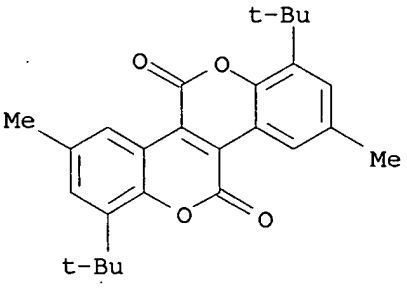
AB Dibenzonaphthyrones I (A1, A2 = C6-18 aromatic system bearing 0-4 substituents), exclusive of 14 specific known compds., are claimed; all the I are useful for bulk coloration of plastics. Thus, 2,4-di-tert-butylphenol (II) was cyclocondensed with glyoxylic acid to give 5,7-di-tert-butyl-3-hydroxybenzofuran-2(3H)-one, which was thermally dehydratively dimerized to the isoxindigo in 76% yield (based on II) and further heated in refluxing BuOH containing pyridine for 16 h to give 95% 1,3,7,9-tetra-tert-butyl[1]benzopyrano[4,3-c][1]benzopyran-5,11-dione, which showed high lightfastness and color intensity in PET and PBT.

IT **80360-50-5P 80360-51-6P 80360-52-7P**
247128-93-4P 247128-94-5P 247128-95-6P
247128-96-7P 247128-97-8P 247128-98-9P
247128-99-0P 247129-00-6P 247129-01-7P
247129-02-8P
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of dibenzonaphthyrones for coloring high-mol.-weight organic material)

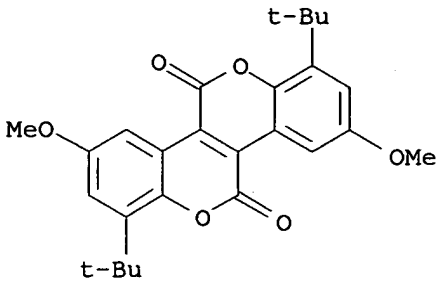
RN 80360-50-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,3,7,9-tetrakis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



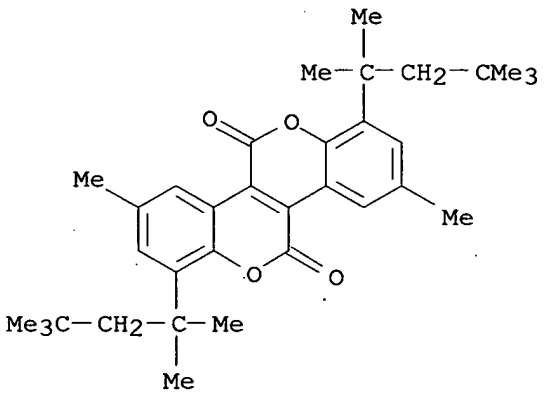
RN 80360-51-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-dimethyl- (9CI) (CA INDEX NAME)



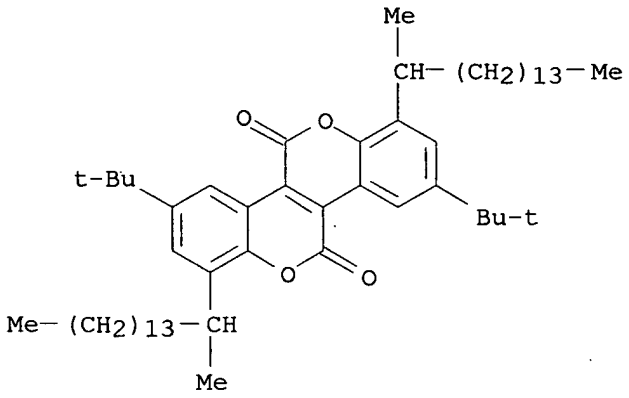
RN 80360-52-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-dimethoxy- (9CI) (CA INDEX NAME)



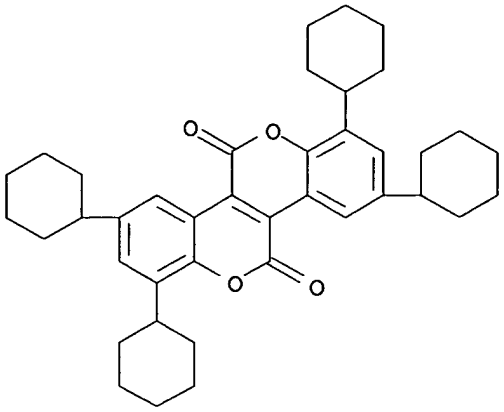
RN 247128-93-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 3,9-dimethyl-1,7-bis(1,1,3,3-tetramethylbutyl)- (9CI) (CA INDEX NAME)



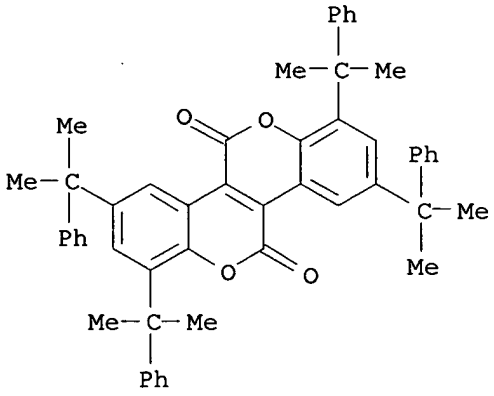
RN 247128-94-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 3,9-bis(1,1-dimethylethyl)-1,7-bis(1-methylpentadecyl)- (9CI) (CA INDEX NAME)



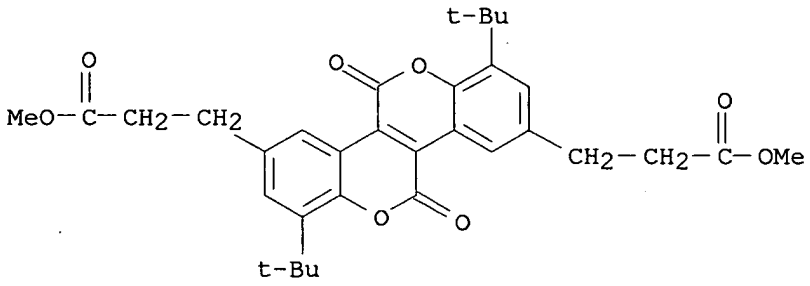
RN 247128-95-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,3,7,9-tetracyclohexyl- (9CI) (CA INDEX NAME)



RN 247128-96-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,3,7,9-tetrakis(1-methyl-1-phenylethyl)- (9CI) (CA INDEX NAME)

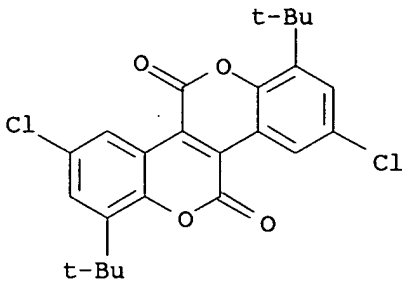


RN 247128-97-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-3,9-dipropanoic acid, 1,7-bis(1,1-dimethylethyl)-5,11-dihydro-5,11-dioxo-, dimethyl ester (9CI) (CA INDEX NAME)

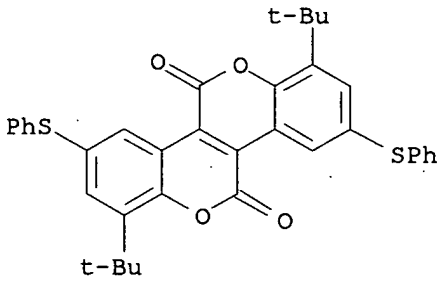


RN 247128-98-9 CAPLUS

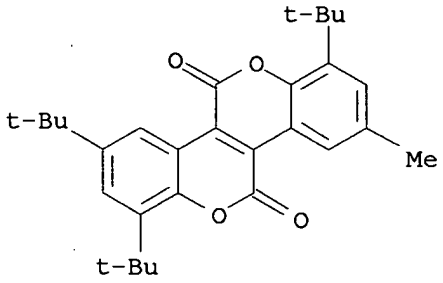
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 3,9-dichloro-1,7-bis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



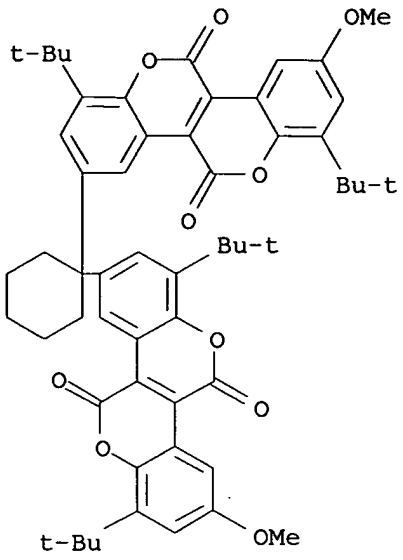
RN 247128-99-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-bis(phenylthio)- (9CI) (CA INDEX NAME)



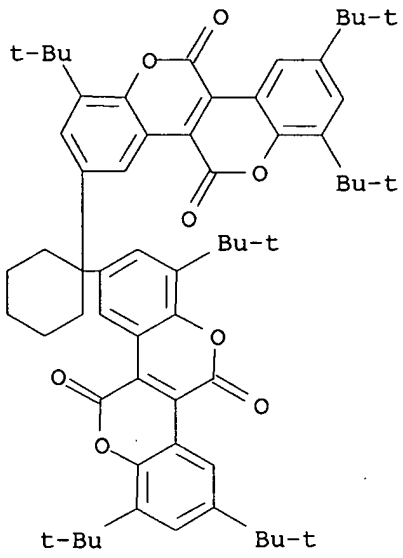
RN 247129-00-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,3,7-tris(1,1-dimethylethyl)-9-methyl- (9CI) (CA INDEX NAME)



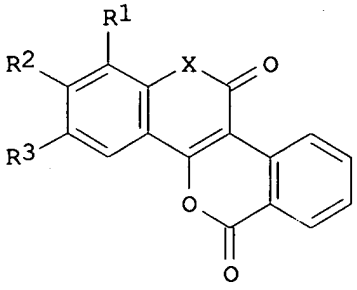
RN 247129-01-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 3,3'-cyclohexylidenebis[1,7-bis(1,1-dimethylethyl)-9-methoxy- (9CI) (CA INDEX NAME)



RN 247129-02-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 3,3'-cyclohexylidenebis[1,7,9-tris(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



L22 ANSWER 20 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:480561 CAPLUS
DOCUMENT NUMBER: 131:170255
TITLE: A new method for the synthesis of 1/3-substituted-6H-[2]-benzopyrano[4,3-c]quinoline-6,11-[12H]-diones and [2] benzopyrano-[4,3-c][1]benzopyran-5,12-diones
AUTHOR(S): Mulwad, V. V.; Lohar, M. V.
CORPORATE SOURCE: Department of Chemistry, The Institute of Science, Mumbai, 400 032, India
SOURCE: Indian Journal of Heterocyclic Chemistry (1999), 8(4), 337-338
CODEN: IJCHEI; ISSN: 0971-1627
PUBLISHER: Prof. R. S. Varma
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 131:170255
GI

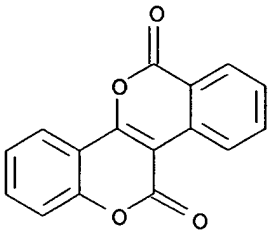


I

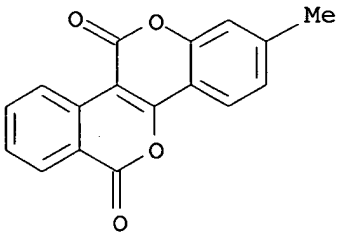
AB A new and facile method for the synthesis of 1/3-substituted-6H-[2]-benzopyrano[4,3-c]quinoline-6,11-[12H]-diones and [2]benzopyrano[4,3-c][1]benzopyran-5,12-diones I (R1 = H, Me, OMe, Ph, 4-MeC6H4, Et; R2 = H, Me; R3 = H, Me, OMe, Cl, Br; X = NH, NR1, O) by the condensation of 4-hydroxy-2-quinolones or 4-hydroxycoumarins with Me salicylate has been developed. This method offers better yields as compared to previously known methods.

IT **2288-98-4P 27284-76-0P 27284-78-2P 27284-80-6P 238751-25-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of benzopyranoquinolinediones and benzopyranobenzopyrandiones via cyclocondensation of hydroxyquinolines or hydroxycoumarins and Me salicylate)

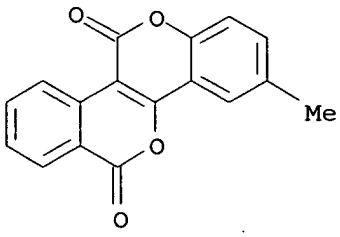
RN 2288-98-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione (8CI, 9CI) (CA INDEX NAME)



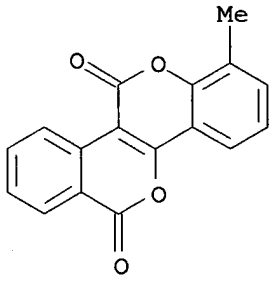
RN 27284-76-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-methyl- (8CI, 9CI)
(CA INDEX NAME)



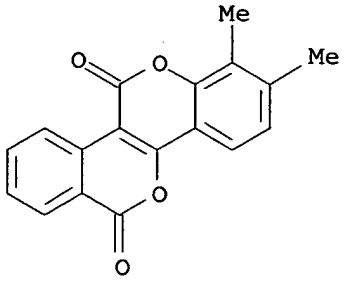
RN 27284-78-2 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-methyl- (8CI, 9CI)
(CA INDEX NAME)



RN 27284-80-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 1-methyl- (8CI, 9CI)
(CA INDEX NAME)

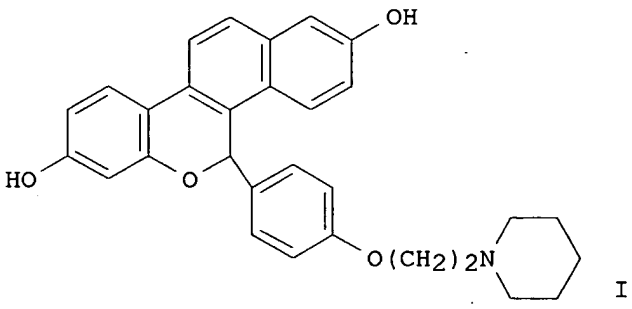


RN 238751-25-2 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 1,2-dimethyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 21 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:215077 CAPLUS
DOCUMENT NUMBER: 128:266187
TITLE: Synthesis and Pharmacology of Conformationally Restricted Raloxifene Analogs: Highly Potent Selective Estrogen Receptor Modulators
AUTHOR(S): Grese, Timothy A.; Pennington, Lewis D.; Sluka, James P.; Adrian, M. Dee; Cole, Harlan W.; Fuson, Tina R.; Magee, David E.; Phillips, D. Lynn; Rowley, Ellen R.; Shetler, Pamela K.; Short, Lorri L.; Venugopalan, Murali; Yang, Na N.; Sato, Masahiko; Glasebrook, Andrew L.; Bryant, Henry U.
CORPORATE SOURCE: Lilly Research Laboratories, Eli Lilly and Company, Indianapolis, IN, 46285, USA
SOURCE: Journal of Medicinal Chemistry (1998), 41(8), 1272-1283
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



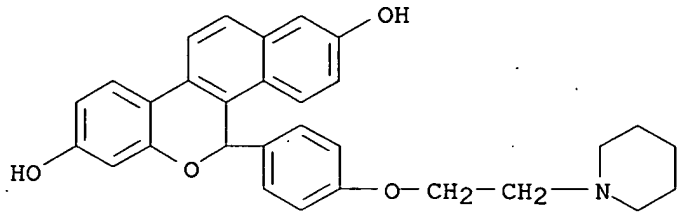
I

AB Raloxifene is a selective estrogen receptor modulator (SERM) which is currently under clin. evaluation for the prevention and treatment of postmenopausal osteoporosis. In vivo structure-activity relationships and mol. modeling studies indicated that the orientation of the basic amine-containing side chain of raloxifene relative to the stilbene plane is an important discriminating factor for the maintenance of tissue selectivity. A series of raloxifene analogs where this side chain is held in an orientation which is orthogonal to the stilbene plane, similar to the low-energy conformation predicted for raloxifene were constructed. These analogs were prepared and tested for their activity in a series of in vitro and in vivo biol. assays reflective of the SERM profile. The ability of these analogs to (1) bind the estrogen receptor, (2) antagonize estrogen-stimulated proliferation of MCF-7 cells in vitro, (3) stimulate TGF-β3 gene expression in cell culture, (4) inhibit the uterine effects of ethynyl estradiol in immature rats, and (5) potently reduce serum cholesterol and protect against osteopenia in ovariectomized (OVX) rats without estrogen-like stimulation of uterine tissue is detailed. These data demonstrate that LY357489 (I) is among the most potent SERMs described to date with in vivo efficacy on bone and cholesterol metabolism in OVX rats at doses as low as 0.01 mg/kg/d.
IT **188824-17-1P**, LY 357489

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(preparation of conformationally restricted raloxifene analogs and pharmacol. as selective estrogen receptor modulators)

RN 188824-17-1 CAPLUS

CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

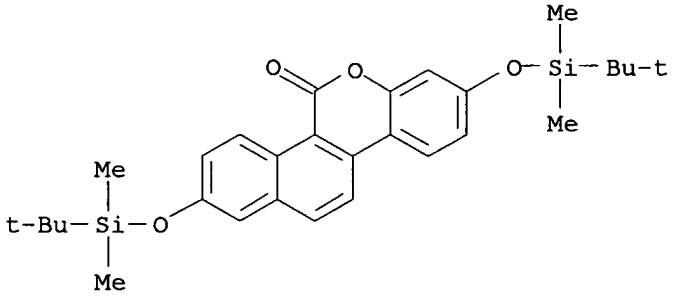


IT **188824-49-9P 188824-50-2P 188824-51-3P 188824-59-1P 204141-62-8P 205318-98-5P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of conformationally restricted raloxifene analogs and pharmacol. as selective estrogen receptor modulators)

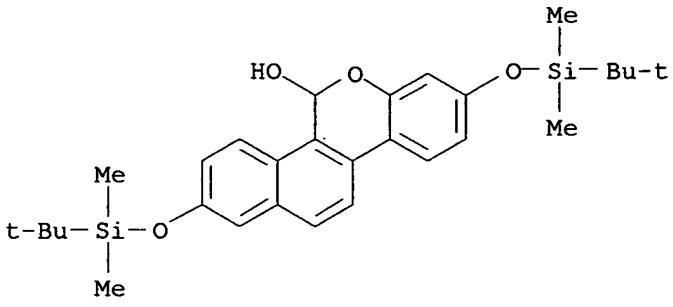
RN 188824-49-9 CAPLUS

CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)

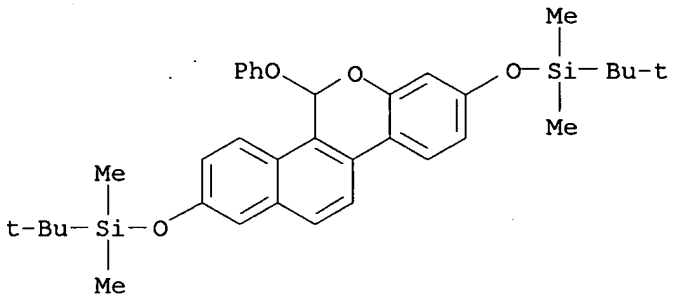


RN 188824-50-2 CAPLUS

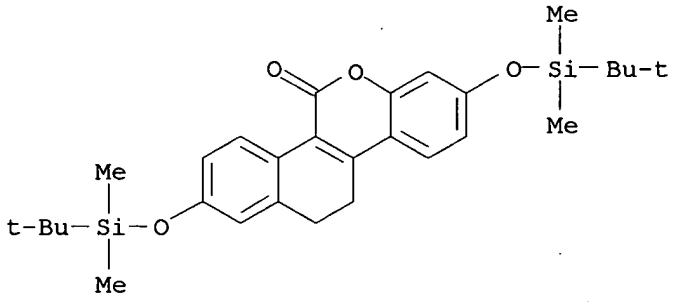
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-ol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



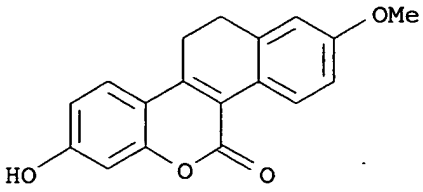
RN 188824-51-3 CAPLUS
CN Silane, [(5-phenoxy-5H-benzo[b]naphtho[2,1-d]pyran-2,8-diyl)bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



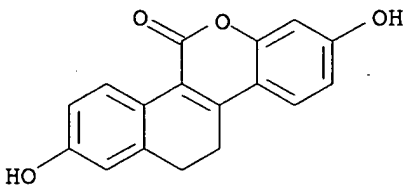
RN 188824-59-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



RN 204141-62-8 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 11,12-dihydro-8-hydroxy-2-methoxy- (9CI) (CA INDEX NAME)



RN 205318-98-5 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 11,12-dihydro-2,8-dihydroxy- (9CI) (CA INDEX NAME)

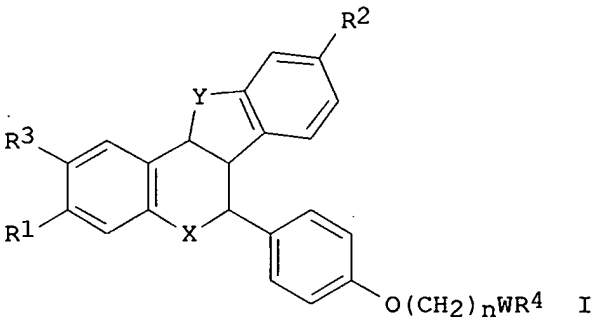


REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 22 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:180547 CAPLUS
DOCUMENT NUMBER: 128:217362
TITLE: Preparation of benzothienobenzopyrans, benzophenanthridines, and related compounds for treatment of postmenopausal syndrome.
INVENTOR(S): Grese, Timothy Alan
PATENT ASSIGNEE(S): Eli Lilly and Co., USA
SOURCE: U.S., 39 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 5726186	A	19980310	US 1996-696279		19960813
US 6004971	A	19991221	US 1997-878799		19970619
US 6133288	A	20001017	US 1999-436743		19991109
PRIORITY APPLN. INFO.:			US 1995-3496P	P	19950908
			US 1996-696279	A3	19960813
			US 1997-878799	A1	19970619

OTHER SOURCE(S): MARPAT 128:217362
GI



I

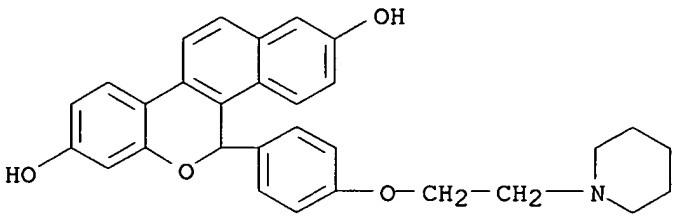
AB Title compds. [I; X = O, S; Y = O, S, CH2, CH2CH2, CH:CH, NR5; R1-R3 = H, OH, alkoxy, PhCO2, alkylcarbonyloxy, alkylsulfonyloxy, OSO2CF3, Cl, F; n = 1, 2; W = CH2, CO; R4 = 1-piperidinyl, 2-oxo-1-piperidinyl, 1-pyrrolidinyl, methyl-1-pyrrolidinyl, dimethyl-1-pyrrolidinyl, 2-oxo-1-pyrrolidinyl, 4-morpholino, dimethylamino, diethylamino, 1-hexamethyleneimino; R5 = alkyl, PhCO, alkylcarbonyl, phenoxycarbonyl, alkoxycarbonyl, alkylsulfonyl, phenylsulfonyl, SO2CF3], were prepared Thus, 6-methoxythianaphthalen-2-one (preparation given) was stirred with 4-methoxysalicylaldehyde and Et3N in CH2Cl2 to give 6a,11a-dihydro-3,9-dimethoxy-6H-[1]benzothieno[3,2-c][1]benzopyran-6-one. This was converted in several steps to 3,9-dihydroxy-6-[4-[2-(1-piperidinyl)ethoxy]phenyl]-6H-[1]benzothieno[3,2-c][1]benzopyran. The latter at 0.1 mg/kg in ovariectomized rats reduced serum cholesterol by 72.8%.

IT **188824-17-1P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of benzothienobenzopyrans, benzophenanthridines, and related compds. for treatment of postmenopausal syndrome)

RN 188824-17-1 CAPLUS

CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)



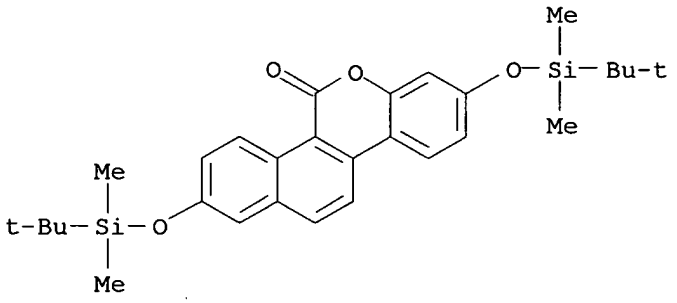
IT **188824-49-9P 188824-50-2P 188824-51-3P 188824-52-4P 188824-59-1P 204141-62-8P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of benzothienobenzopyrans, benzophenanthridines, and related compds. for treatment of postmenopausal syndrome)

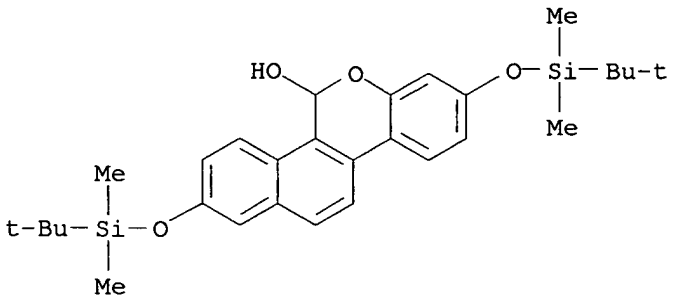
RN 188824-49-9 CAPLUS

CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



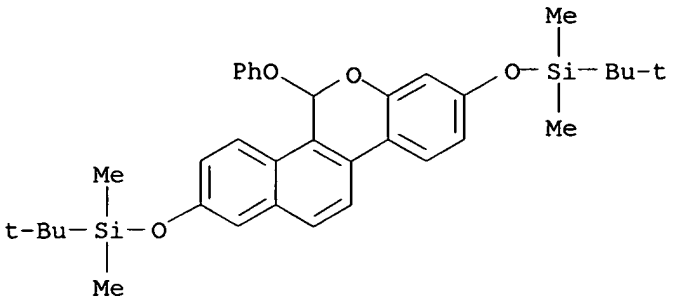
RN 188824-50-2 CAPLUS

CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-ol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)

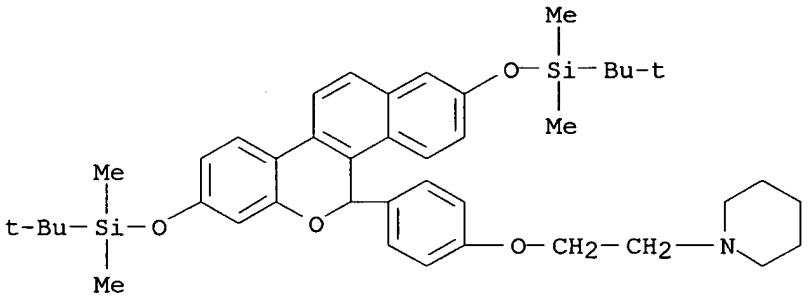


RN 188824-51-3 CAPLUS

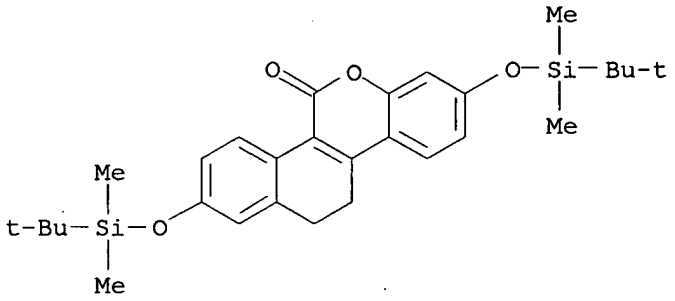
CN Silane, [(5-phenoxy-5H-benzo[b]naphtho[2,1-d]pyran-2,8-diyl)bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



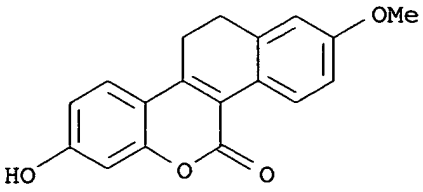
RN 188824-52-4 CAPLUS
CN Piperidine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5H-benzo[b]naphtho[2,1-d]pyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



RN 188824-59-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)



RN 204141-62-8 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 11,12-dihydro-8-hydroxy-2-methoxy- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 23 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:286346 CAPLUS
DOCUMENT NUMBER: 126:264018
TITLE: Preparation of pentacyclic compounds for the treatment conditions associated with post-menopausal syndrome
INVENTOR(S): Grese, Timothy Alan
PATENT ASSIGNEE(S): Eli Lilly and Co., USA
SOURCE: Eur. Pat. Appl., 72 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 761669	A2	19970312	EP 1996-306351	19960902
EP 761669	A3	19971029		
EP 761669	B1	20001122		
R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
CA 2230974	AA	19970313	CA 1996-2230974	19960826
WO 9709044	A1	19970313	WO 1996-US13778	19960826
W: AL, AM, AU, AZ, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9669590	A1	19970327	AU 1996-69590	19960826
AU 705454	B2	19990520		
CN 1201392	A	19981209	CN 1996-198083	19960826
BR 9610356	A	19990706	BR 1996-10356	19960826
JP 11514347	T2	19991207	JP 1996-511257	19960826
CZ 286236	B6	20000216	CZ 1998-678	19960826
IL 123560	A1	20020210	IL 1996-123560	19960826
IL 140162	A1	20020210	IL 1996-140162	19960826
AT 197712	E	20001215	AT 1996-306351	19960902
NO 9800936	A	19980507	NO 1998-936	19980304
GR 3035253	T3	20010430	GR 2001-400073	20010117

PRIORITY APPLN. INFO.:	US 1995-3496P	P	19950908
	IL 1996-123560	A3	19960826
	WO 1996-US13778	W	19960826

OTHER SOURCE(S): MARPAT 126:264018
GI

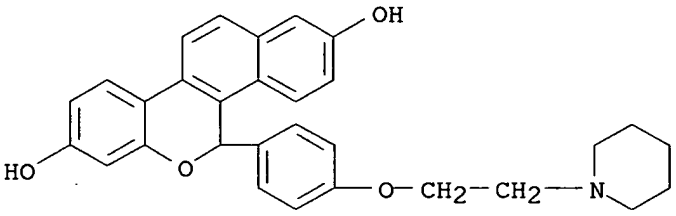
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compds. [I and II; X = O, S, NR5 (wherein R5 = C1-3 alkyl, COPh, SO2CF3, etc.); Y = O, S, CH2, CH2CH2, CH:CH, NR5; B = CH2, CO; R1-R3 = H, OH, O(C1-C4 alkyl), etc.; n = 1, 2; W = CH2, CO; R4 = 1-piperidinyl, 2-oxo-1-piperidinyl, 1-pyrrolidinyl, etc.], useful for the treatment of the various conditions associated with post-menopausal syndrome such as osteoporosis, and uterine fibroid disease, endometriosis, and aortal smooth muscle cell proliferation, and as bone loss or resorption inhibitors and serum cholesterol levels lowering agents, were prepared and

formulated. Thus, reaction of 3,9-bis[(tert-butyldimethylsilyl)oxy]-6-phenox-6-H-[1]benzothieno[3,2-c][1]benzopyran with 4-(2-piperidinoethoxy)phenylmagnesium bromide in PhMe/THF followed by removal of TBDMS groups with TBAF in THF afforded III which showed IC50 of 0.2 nM against MCF-7 breast adenocarcinoma cells proliferation.

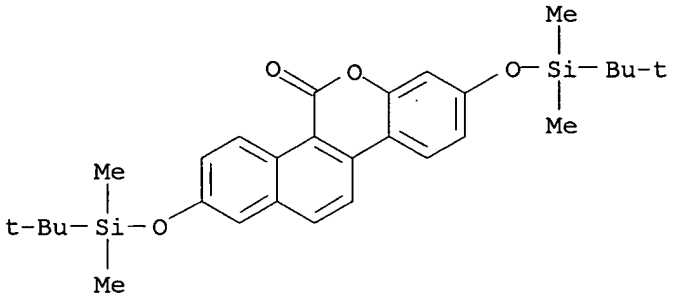
IT **188824-17-1P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of pentacyclic compds. for the treatment conditions associated with post-menopausal syndrome)

RN 188824-17-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-2,8-diol, 5-[4-[2-(1-piperidinyl)ethoxy]phenyl]- (9CI) (CA INDEX NAME)

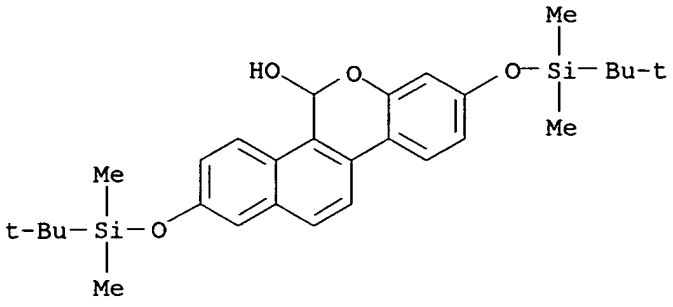


IT **188824-49-9P 188824-50-2P 188824-51-3P**
188824-52-4P 188824-58-0P 188824-59-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pentacyclic compds. for the treatment conditions associated with post-menopausal syndrome)

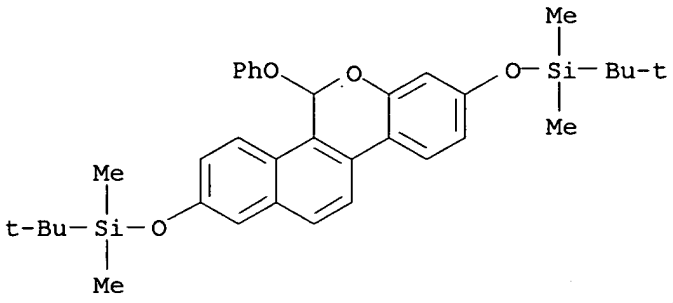
RN 188824-49-9 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



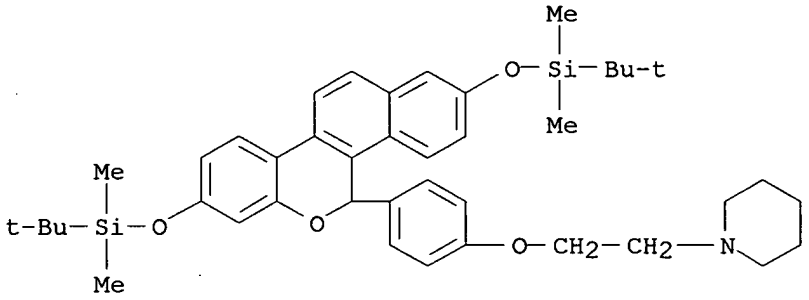
RN 188824-50-2 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-ol, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



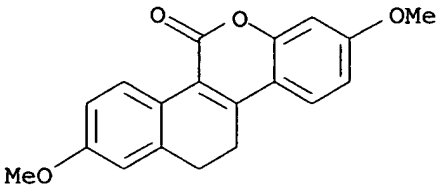
RN 188824-51-3 CAPLUS
CN Silane, [(5-phenoxy-5H-benzo[b]naphtho[2,1-d]pyran-2,8-diyl)bis(oxy)]bis[(1,1-dimethylethyl)dimethyl- (9CI) (CA INDEX NAME)



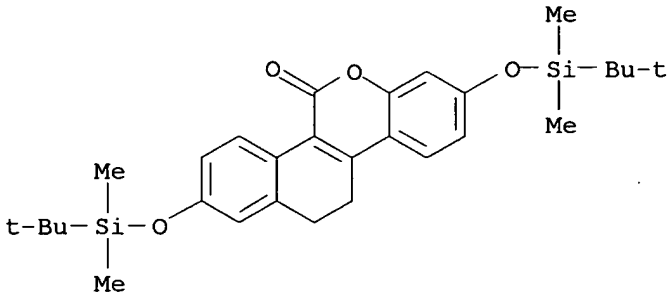
RN 188824-52-4 CAPLUS
CN Piperidine, 1-[2-[4-[2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5H-benzo[b]naphtho[2,1-d]pyran-5-yl]phenoxy]ethyl]- (9CI) (CA INDEX NAME)



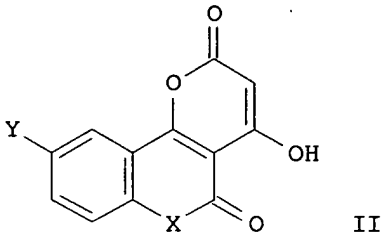
RN 188824-58-0 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 11,12-dihydro-2,8-dimethoxy- (9CI) (CA INDEX NAME)

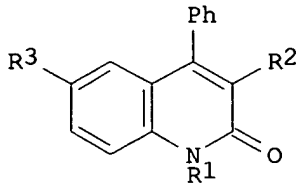


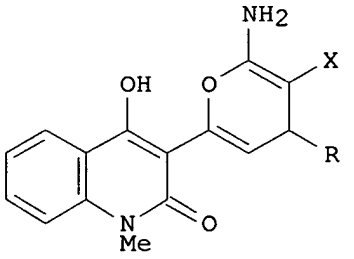
RN 188824-59-1 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 2,8-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-11,12-dihydro- (9CI) (CA INDEX NAME)

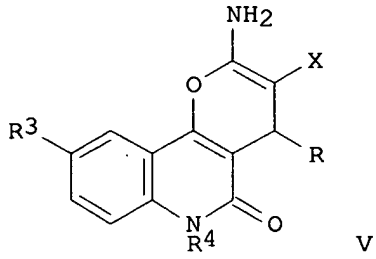


L22 ANSWER 24 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:469268 CAPLUS
DOCUMENT NUMBER: 123:285826
TITLE: Reactions with 2(1H)-quinolinone and coumarin derivatives: new routes to polysubstituted 2(1H)-quinolinone and coumarin derivatives
AUTHOR(S): El-Taweel, Fathy Mohamed Abdel Aziz; Zaki, Salah; Sowellim, Ahmed; Elagamey, Abdel Ghani Ali
CORPORATE SOURCE: Dep. Chemistry, Faculty Science, New Damietta University, Egypt
SOURCE: Bulletin of the Chemical Society of Japan (1995), 68(3), 905-10
CODEN: BCSJA8; ISSN: 0009-2673
PUBLISHER: Nippon Kagakkai
DOCUMENT TYPE: Journal
LANGUAGE: English
GI


II


III


IV


V

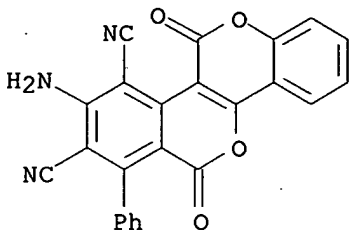
AB Whereas reaction of benzylidenenitriles RCH:C(CN)X1 [I, R = Ph, 4-MeOC6H4, 4-ClC6H4; X1 = CN, CO2Et] (or a mixture of either malononitrile or Et cyanoacetate and aromatic aldehydes) with pyranoquinolinedione II (X = NMe, Y = H) or quinolinone III (R1 = Me, R2 = Ac, R3 = H) in ethanol/piperidine gave 4H-pyran derivs. IV, the reaction of II (X = NEt, Y = H; X = NH, Y = Cl) or III (R1 = Et, R2 = Ac, R3 = H; R1 = H, R2 = Ac, R3 = Cl) with the same reagents afforded pyranoquinolinones V (R4 = Et, H). V (R4 = Et, H) were also prepared from I and III (R1 = Et, R2 = R3 = H; R1 = R2 = H, R3 = Cl; R1 = Et, R2 = CHO, R3 = Cl). Reaction of pyranocoumarin II (X = O, Y = H) with I (R = Ph, X1 = CN) yielded a benzopyranobenzopyran-6,11-dione derivative Treatment of bromide III (R1 = Et, R2 = COCH2Br, R3 = H) with aqueous KCN or hydroxylamine afforded the substitution derivative III (R1 = Et, R2 = COCH2CONH2, R3 = H) and oxime III [R1 = Et, R2 = C(CH2Br):NOH, R3 = H] resp.

IT **169308-32-1P**

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of pyrans and pyranoquinolinones)

RN 169308-32-1 CAPLUS

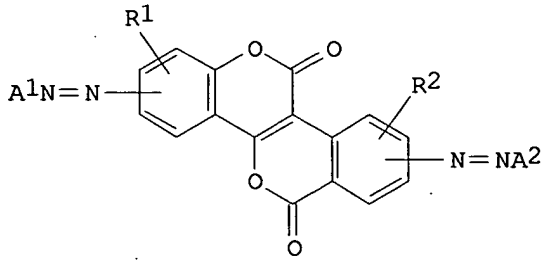
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-8,10-dicarbonitrile, 9-amino-6,11-dioxo-7-phenyl- (9CI) (CA INDEX NAME)



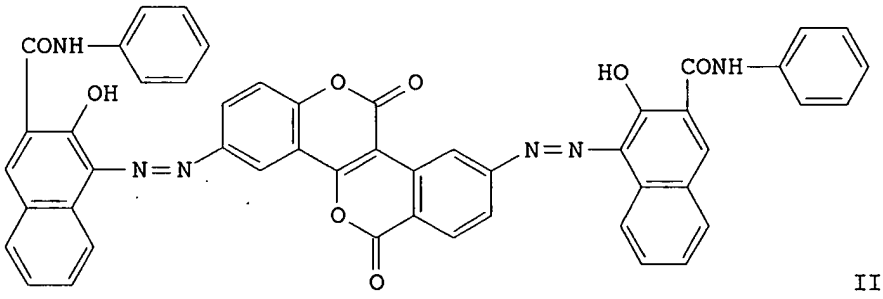
L72 ANSWER 25 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:591276 CAPLUS
DOCUMENT NUMBER: 121:191276
TITLE: Electrophotographic photoreceptors using novel bisazo-type carrier-generating agent
INVENTOR(S): Shibata, Toyoko; Fujimoto, Shingo
PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06110233	A2	19940422	JP 1992-258472	19920928

PRIORITY APPLN. INFO.: JP 1992-258472 19920928
OTHER SOURCE(S): MARPAT 121:191276
GI



I



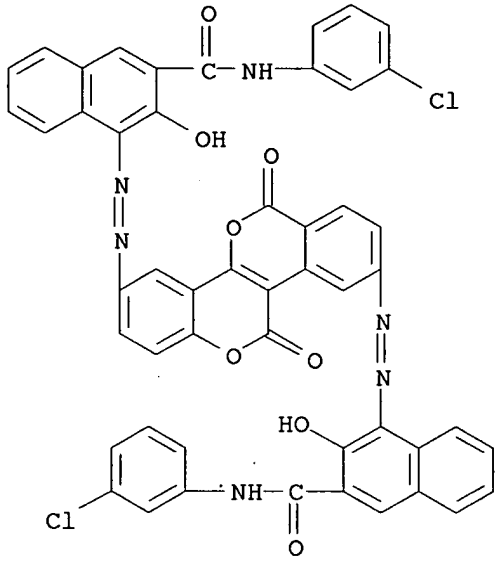
II

AB The photoreceptors comprise a conductive support with a coating of a photoreceptor layer containing an bisazo compound I [R1, R2 = H, halo, lower alkyl, lower alkoxy, CN; A1, A2 = coupler residue with OH group having coupling ability]. The photoreceptors show high photosensitivity, low residual potential, and good durability in repeated use, and the compound exhibits good carrier-generating properties in combinations with any type of carrier-transporting agents. Thus, an Al vapor-deposited polyester film with an interlayer was coated with a carrier-generating layer containing II and with a carrier-transporting layer containing a stilbene compound to give a photoreceptor.

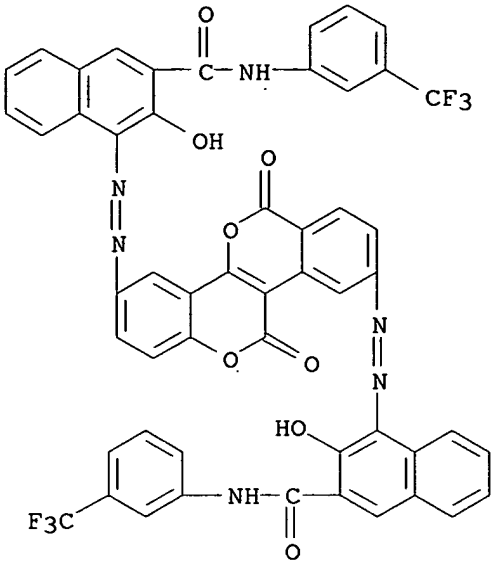
IT **157687-27-9 157687-28-0 157687-29-1**
157687-30-4 157687-31-5 157687-32-6

157687-33-7 157687-34-8 157687-35-9
157687-36-0 157687-37-1 157687-38-2
157687-39-3 157687-40-6 157687-41-7
157959-55-2 157959-56-3 157959-57-4
157959-58-5 157959-59-6
RL: USES (Uses)
(carrier-generating agent, electrophotog. photoreceptor using)

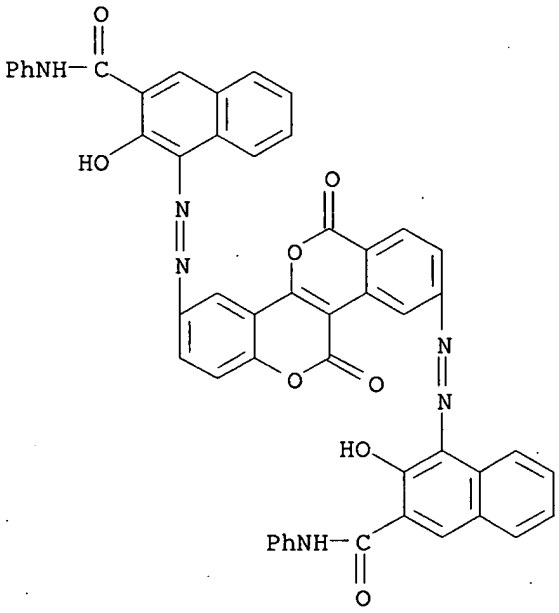
RN 157687-27-9 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3,9-diyl)bis(azo)]bis[N-(3-chlorophenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



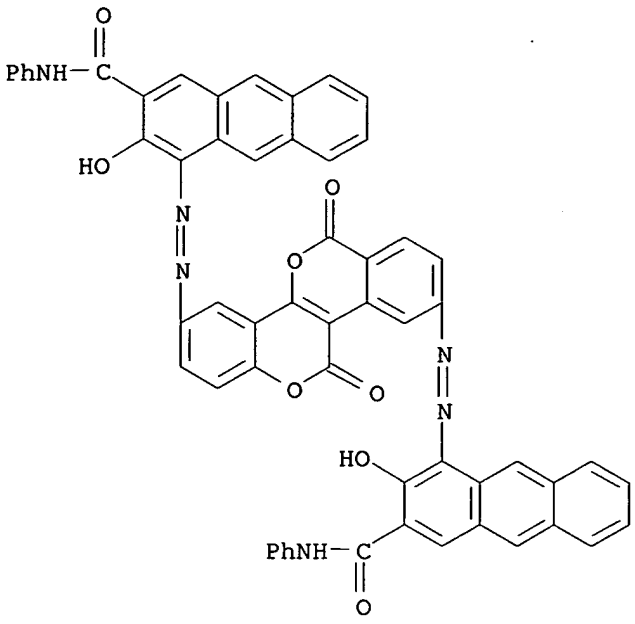
RN 157687-28-0 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3,9-diyl)bis(azo)]bis[3-hydroxy-N-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



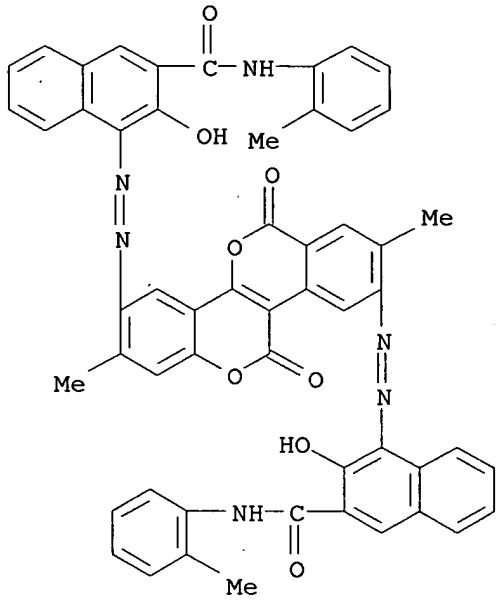
RN 157687-29-1 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3,9-diyl)bis(azo)]bis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)



RN 157687-30-4 CAPLUS
CN 2-Anthracenecarboxamide, 4,4'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3,9-diyl)bis(azo)]bis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)

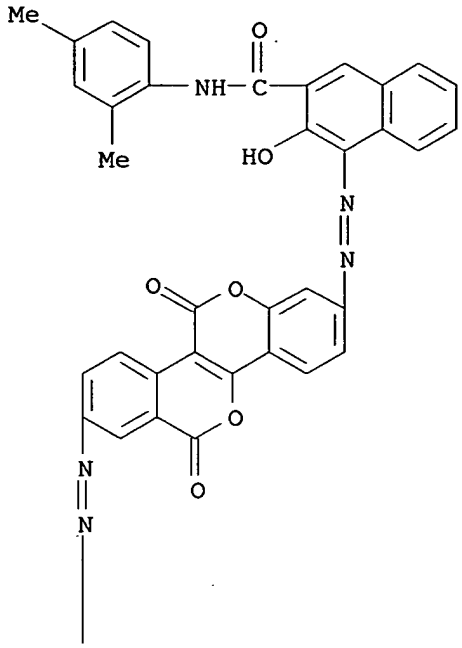


RN 157687-31-5 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(2,8-dimethyl-6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3,9-diyl)bis(azo)]bis[3-hydroxy-N-(2-methylphenyl)- (9CI) (CA INDEX NAME)

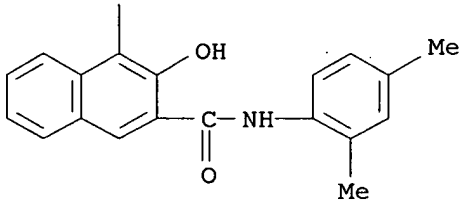


RN 157687-32-6 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,8-diyl)bis(azo)]bis[N-(2,4-dimethylphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)

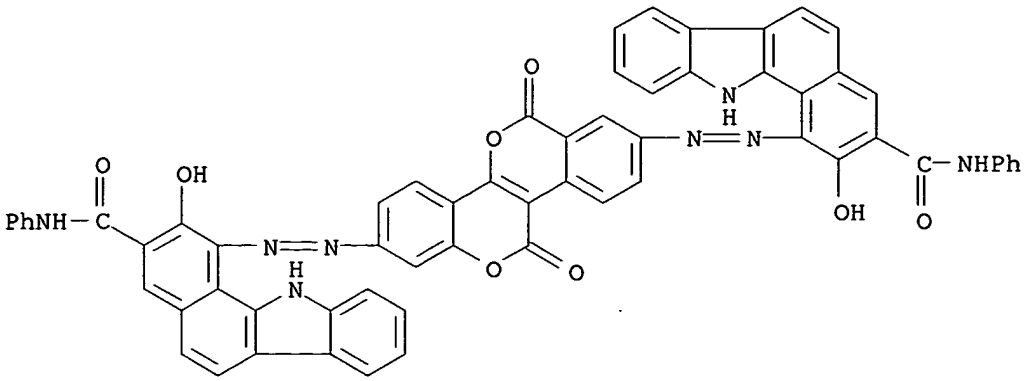
PAGE 1-A



PAGE 2-A

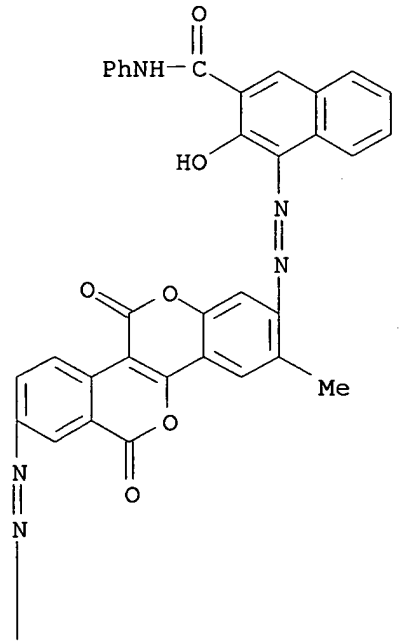


RN 157687-33-7 CAPLUS
CN 11H-Benzo[a]carbazole-3-carboxamide, 1,1'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,8-diyl)bis(azo)]bis[2-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)

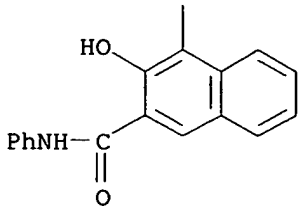


RN 157687-34-8 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(3-methyl-6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,8-diyl)bis(azo)]bis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

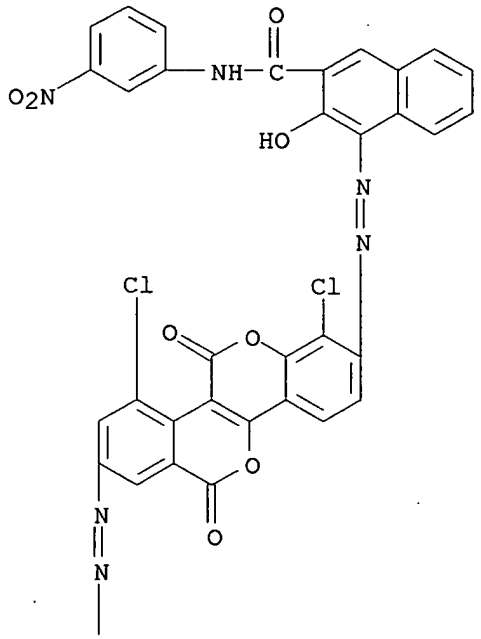


PAGE 2-A

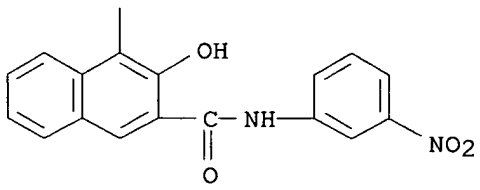


RN 157687-35-9 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(1,10-dichloro-6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,8-diyl)bis(azo)]bis[3-hydroxy-N-(3-nitrophenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

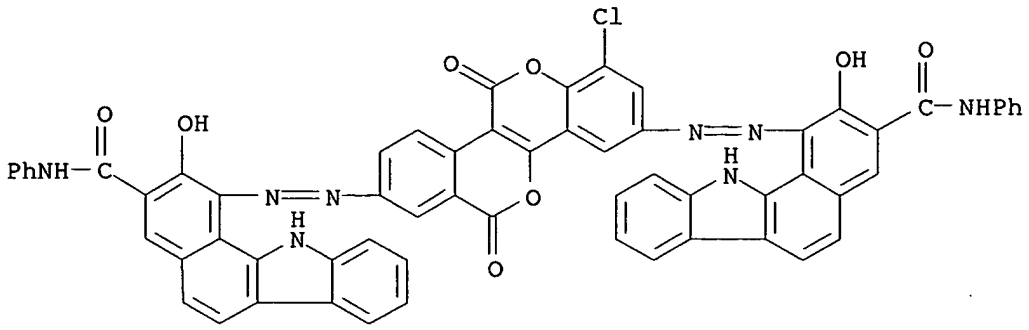


PAGE 2-A

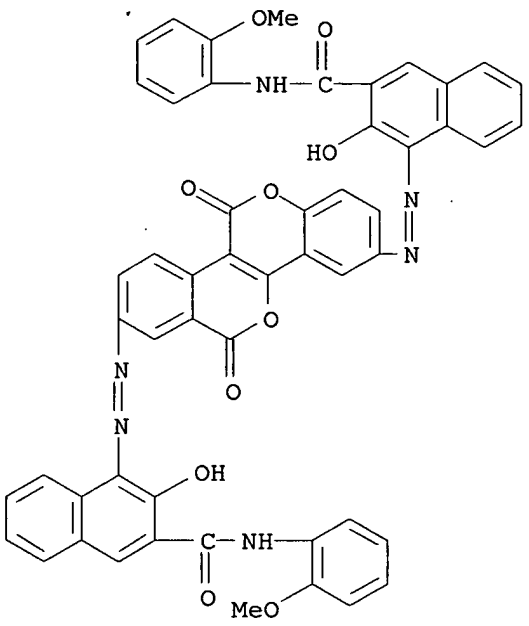


RN 157687-36-0 CAPLUS
CN 11H-Benzo[a]carbazole-3-carboxamide, 1,1'-[(1-chloro-6,11-dioxo-6H,11H-

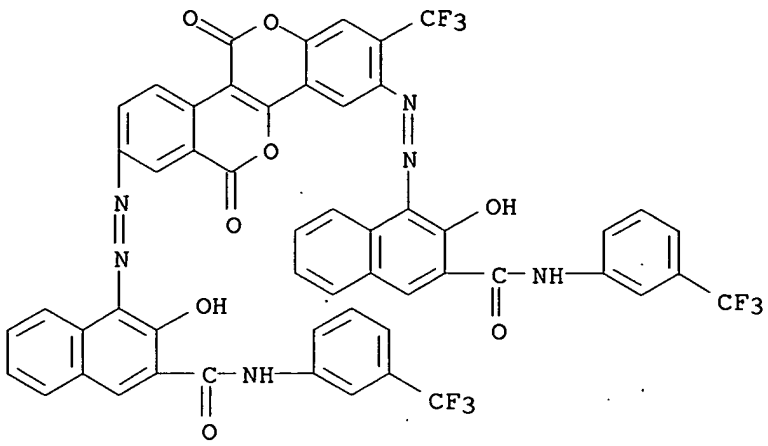
[2]benzopyrano[4,3-c][1]benzopyran-2,8-diyl)bis(azo)]bis[2-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)



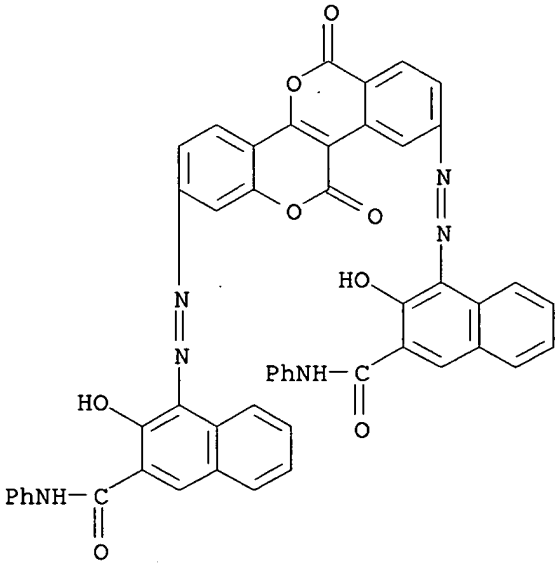
RN 157687-37-1 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3,8-diyl)bis(azo)]bis[3-hydroxy-N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)



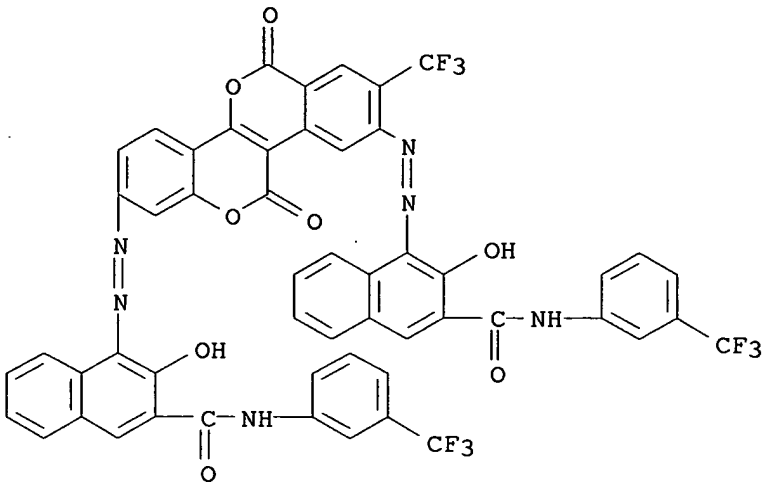
RN 157687-38-2 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(6,11-dioxo-2-(trifluoromethyl)-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3,8-diyl)bis(azo)]bis[3-hydroxy-N-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



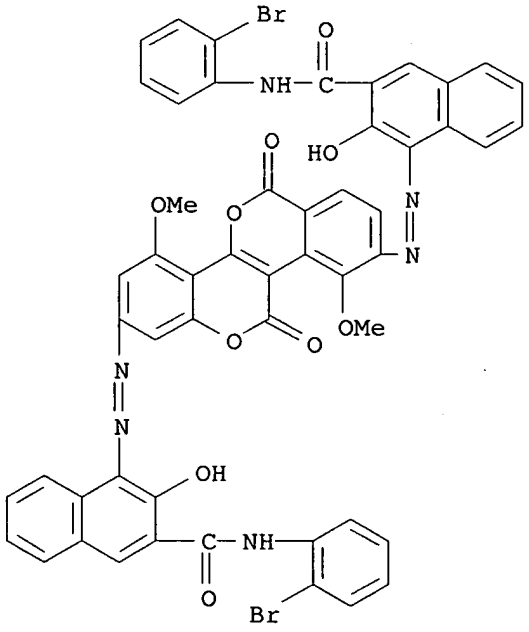
RN 157687-39-3 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,9-diyl)bis(azo)]bis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)



RN 157687-40-6 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(6,11-dioxo-8-(trifluoromethyl)-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3,9-diyl)bis(azo)]bis[3-hydroxy-N-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)

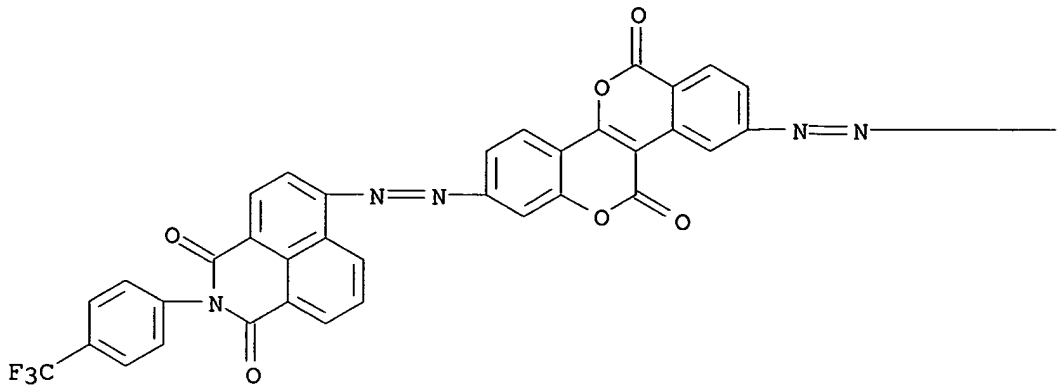


RN 157687-41-7 CAPLUS
CN 2-Naphthalenecarboxamide, 4,4'-[(4,10-dimethoxy-6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,9-diyl)bis(azo)]bis[N-(2-bromophenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



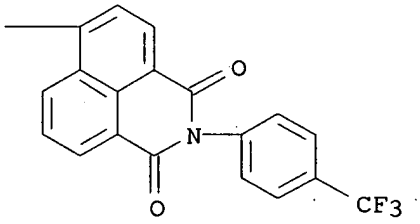
RN 157959-55-2 CAPLUS
CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6,6'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,9-diyl)bis(azo)]bis[hydroxy-2-[4-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

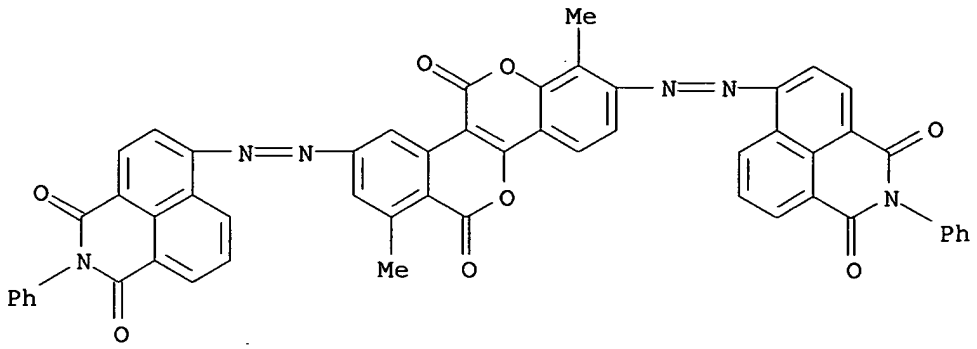


2 (D1—OH)

PAGE 1-B



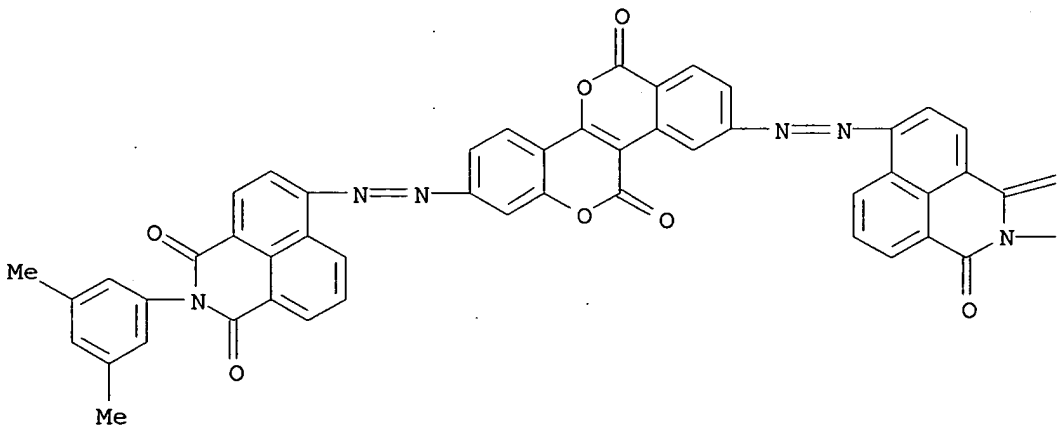
RN 157959-56-3 CAPLUS
CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6,6'-[(1,7-dimethyl-6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,9-diyl)bis(azo)]bis[hydroxy-2-phenyl- (9CI) (CA INDEX NAME)



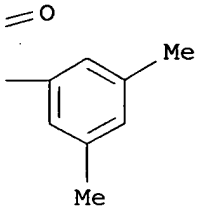
2 (D1—OH)

RN 157959-57-4 CAPLUS
CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6,6'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,9-diyl)bis(azo)]bis[2-(3,5-dimethylphenyl)hydroxy- (9CI) (CA INDEX NAME)

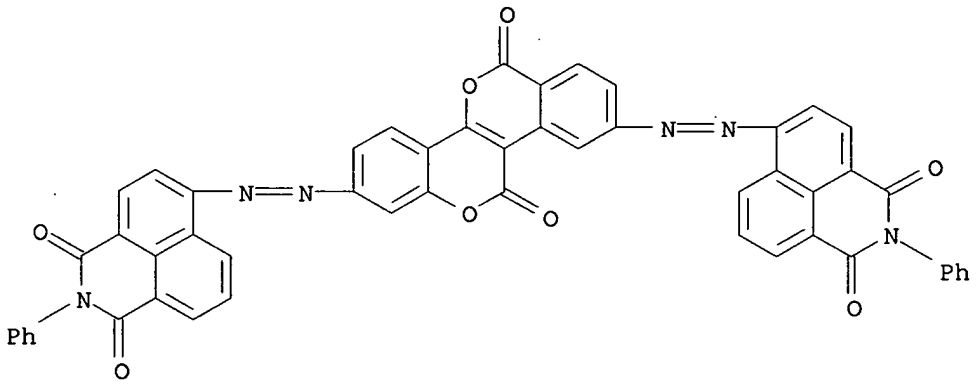
PAGE 1-A



2 (D1—OH)



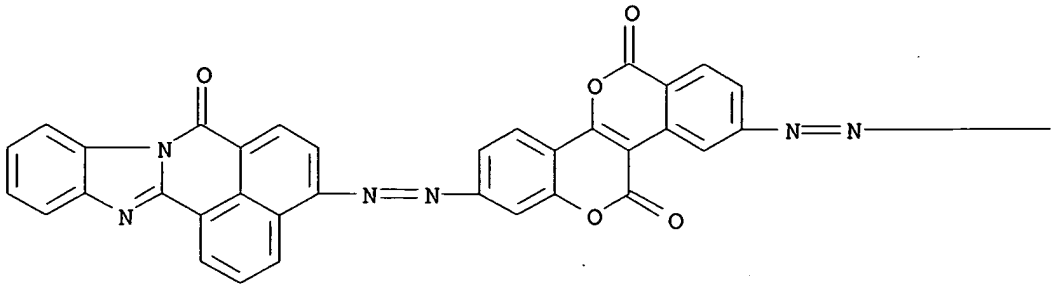
RN 157959-58-5 CAPLUS
CN 1H-Benz[de]isoquinoline-1,3(2H)-dione, 6,6'-[(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2,9-diyl)bis(azo)]bis[hydroxy-2-phenyl- (9CI) (CA INDEX NAME)



2 (D1—OH)

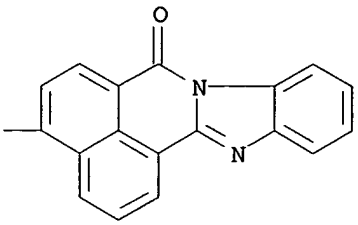
RN 157959-59-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2,9-bis[(hydroxy-7-oxo-7H-benzimidazo[2,1-a]benz[de]isoquinolin-4-yl)azo]- (9CI) (CA INDEX NAME)

PAGE 1-A

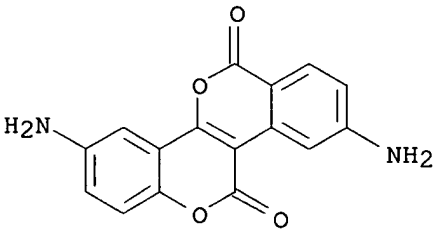


2 (D1— OH)

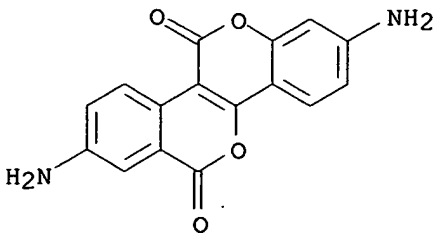
PAGE 1-B



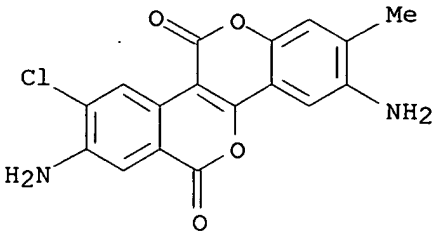
IT **157687-42-8 157687-43-9 157687-44-0**
RL: RCT (Reactant); RACT (Reactant or reagent)
(diazo coupling of, with naphthol derivative)
RN 157687-42-8 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3,9-diamino- (9CI) (CA INDEX NAME)



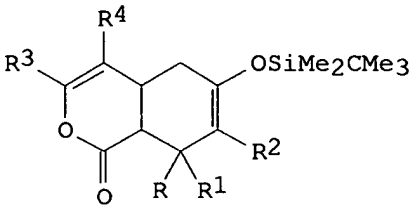
RN 157687-43-9 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2,8-diamino- (9CI) (CA INDEX NAME)



RN 157687-44-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3,8-diamino-9-chloro-2-methyl- (9CI) (CA INDEX NAME)



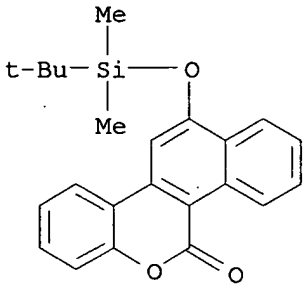
L22 ANSWER 26 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1991:492008 CAPLUS
DOCUMENT NUMBER: 115:92008
TITLE: Diels-Alder reactions of 2-[(trialkylsilyl)oxy]pyrylium cations of 2H-pyran-2-one and 2H-1-benzopyran-2-one derivatives
AUTHOR(S): Ohkata, Katsuo; Lee, Yong Gyun; Utsumi, Yukinori; Ishimaru, Kenji; Akiba, Kinya
CORPORATE SOURCE: Fac. Sci., Hiroshima Univ., Hiroshima, 730, Japan
SOURCE: Journal of Organic Chemistry (1991), 56(17), 5052-9
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 115:92008
GI



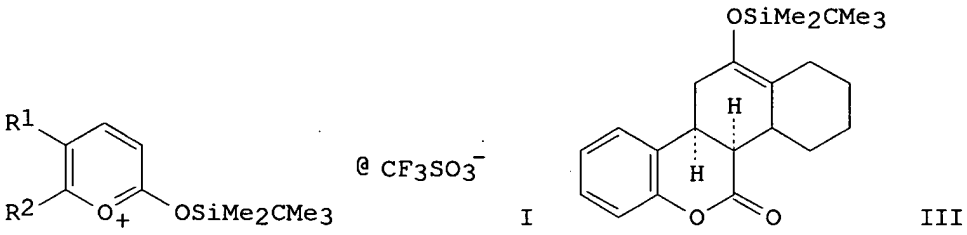
I

AB The reactions of 6-methyl-2H-pyran-2-one and 2H-1-benzopyran-2-one with RR1C:CR2C(:CH2)OSiMe2CMe3 [R, R1 = H, Me, Ph, R2 = H; R = H, R1R2 = (CH2)n, n = 3, 4] in the presence of Me3CSiMe2O3SCF3 gave 30-68% [4 + 2] cycloadducts I [R3 = Me, R4 = H; R3R4 = (CH:CH)2] regio- and stereoselectively. The ring junction in the cycloadducts is cis. Similar reactions of 3-(ethoxycarbonyl)-2-pyrones and 3-(alkoxycarbonyl)coumarins with the 2-(trialkylsilyl)oxy dienes gave 30-80% cycloadducts.

IT **130043-16-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 130043-16-2 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 12-[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)

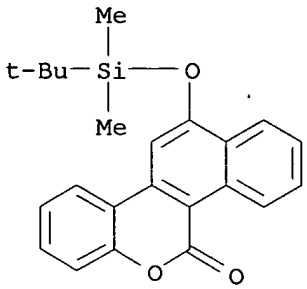


L2 ANSWER 27 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1990:591715 CAPLUS
DOCUMENT NUMBER: 113:191715
TITLE: Synthesis of oxasteroidal skeletons by (4+2) type cycloaddition of coumarin and 6-methyl-2-pyrone with siloxydienes mediated by tert-butyldimethylsilyl triflate
AUTHOR(S): Lee, Yong Gyun; Utsumi, Yukinori; Ohkata, Katsuo; Akiba, Kinya
CORPORATE SOURCE: Fac. Sci., Hiroshima Univ., Hiroshima, 730, Japan
SOURCE: Heterocycles (1990), 30(2, Spec. Issue), 813-16
CODEN: HTCYAM; ISSN: 0385-5414
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 113:191715
GI



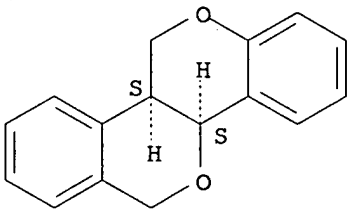
AB A new simple methodol. is described for the preparation of oxasteroidal skeletons containing a lactone ring via cycloaddn. of pyrylium triflates I (R1R2 = CH:CHCH:CH; R1 = H, R2 = Me) with siloxydienes H2C:C(OSiMe2CMe3)CR3:CR4R5 [II; R3 = R5 = H, R4 = Ph; R3 = H, R4 = R5 = Me; R3R4 = (CH2)3, (CH2)4, R5 = H]. Thus, the [4+2] cycloaddn. of I (R1R2 = CH:CHCH:CH) with II [R3R4 = (CH2)4, R5 = H] gave oxasteroid III.

IT **130043-16-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 130043-16-2 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 12-[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



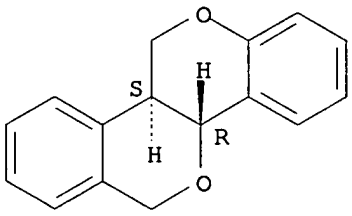
L22 ANSWER 28 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1990:55337 CAPLUS
DOCUMENT NUMBER: 112:55337
TITLE: The stereochemistry of pterocarpanoids. A theoretical study
AUTHOR(S): Schoening, Axel; Friedrichsen, Willy
CORPORATE SOURCE: Inst. Org. Chem., Univ. Kiel, Kiel, D-2300, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Naturforschung, B: Chemical Sciences (1989), 44(8), 975-82
CODEN: ZNBSEN; ISSN: 0932-0776
DOCUMENT TYPE: Journal
LANGUAGE: German
AB Calcns. (AM 1, mol. mechanics) on pterocarpanoids and related compds. (homo-, hetero-analogs) are reported.
IT **124692-93-9 124692-94-0 124693-01-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(heat of formation and mol. mechanics calcns. on)
RN 124692-93-9 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran, 4b,10b-dihydro-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



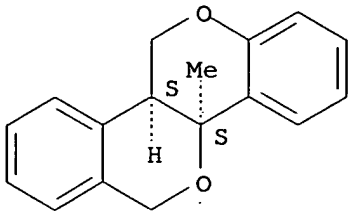
RN 124692-94-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran, 4b,10b-dihydro-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.

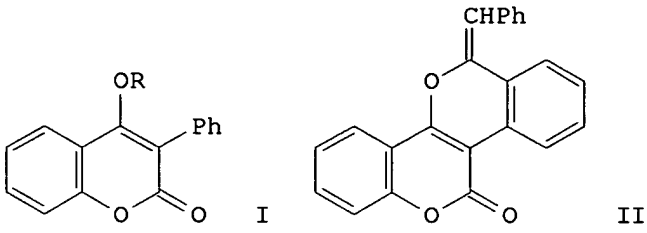


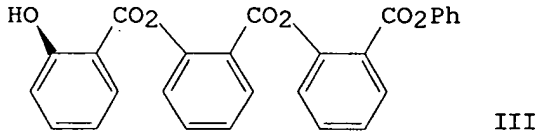
RN 124693-01-2 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran, 4b,10b-dihydro-4b-methyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.


O
Me
S
S
H
O

L22 ANSWER 29 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1988:406441 CAPLUS
DOCUMENT NUMBER: 109:6441
TITLE: New heterocyclic system from salol and phenylacetic acid
AUTHOR(S): Sardesai, Lina G.; Paknikar, Shashikumar K.; Bates, Robert B.; Siahaan, Teruna J.; Kane, Vinayak V.; Mishra, Prasana K.
CORPORATE SOURCE: Dep. Chem., Goa Univ., Goa, 403 005, India
SOURCE: Heterocycles (1987), 26(11), 2941-4
CODEN: HTCYAM; ISSN: 0385-5414
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 109:6441
GI





III

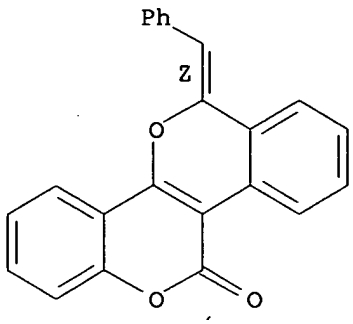
AB Heating 2-HOC6H4CO2Ph with PhCH2CO2Ph in Ph2O gave 28% 2-(PhCH2CO2)C6H4CO2Ph, 7% 4-hydroxy-3-phenylcoumarin (I, R = H), 10% the benzylidenebenzopyranobenzopyranone II, 11% trisalicylide and 6% the oligomeric ester III. Treatment of 2-HOC6H4CO2Ph with PhCH2CO2H gave a similar spectrum of products along with I (R = PhCH2CO), however, yields were less.

IT **114832-91-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

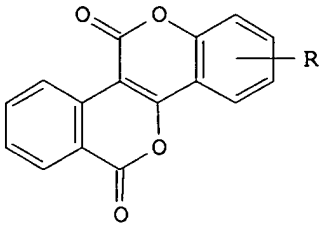
RN 114832-91-6 CAPLUS

CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 6-(phenylmethylene)-, (Z)- (9CI) (CA INDEX NAME)

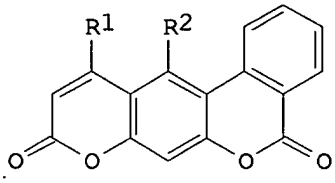
Double bond geometry as shown.


Ph
Z
O
O
O

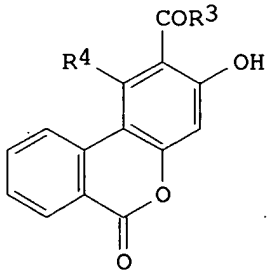
L22 ANSWER 30 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1987:176209 CAPLUS
DOCUMENT NUMBER: 106:176209
TITLE: Synthesis of coumarino[4',3':3,4]isocoumarins, coumarino[7',6':3,4]isocoumarins and dibenzo-α-pyrones
AUTHOR(S): Rani, B. S. Uma; Darbarwar, Malleshwar
CORPORATE SOURCE: Dep. Chem., Osmania Univ., Hyderabad, 500 007, India
SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1986), 25B(6), 619-22
CODEN: IJSBDB; ISSN: 0376-4699
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 106:176209
GI



I



II

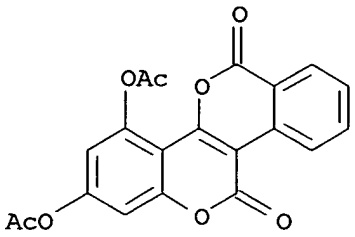


III

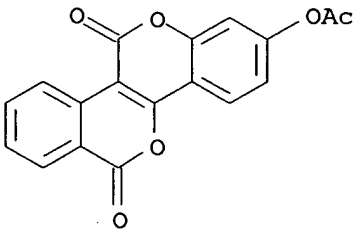
AB Coumarinoisocoumarins I [R = 2-OH, 3-OH, 4-OH, 2,4-(OH)2] and II (R1 = R2 = H, OH; R1 = OH, R2 = H), dibenzo-α-pyrones III (R3 = H, Me; R = H; R3 = Me, R4 = OH) were prepared by the condensation of reactive phenols with 2-bromobenzoic acid in the presence of CuSO4 as catalyst, and screened for antibacterial and antifungal activity. I [R = 4-OH, 2,4-(OAc)2] and II (R1 = OH, OAc; R2 = H; R1 = R2 = OAc) were most active against Staphylococcus aureus and Escherichia coli; I (R = 2-OAc 3-OAc) and II (R1 = OAc, R2 = H; R1 = R2 = OAc) were most active against Aspergillus niger at 100 ppm concentration

IT **107125-08-6 107125-10-0 107125-11-1**
RL: RCT (Reactant); RACT (Reactant or reagent)
(antibacterial and antifungal activity of)

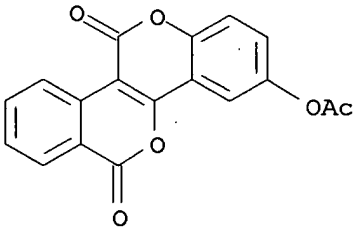
RN 107125-08-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2,4-bis(acetyloxy)- (9CI) (CA INDEX NAME)



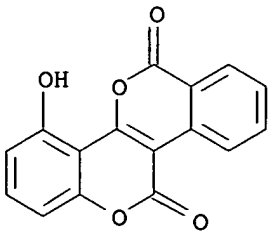
RN 107125-10-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-(acetyloxy)- (9CI) (CA INDEX NAME)



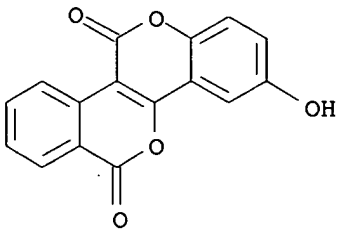
RN 107125-11-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-(acetyloxy)- (9CI) (CA INDEX NAME)



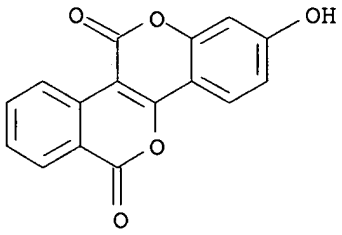
IT **107124-97-0P 107124-98-1P 107124-99-2P**
107125-00-8P 107125-01-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and antibacterial and antifungal activity of)
RN 107124-97-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 4-hydroxy- (9CI) (CA INDEX NAME)



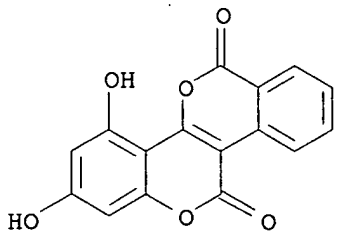
RN 107124-98-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-hydroxy- (9CI) (CA INDEX NAME)



RN 107124-99-2 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-hydroxy- (9CI) (CA INDEX NAME)

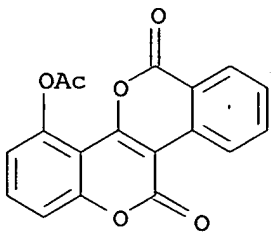


RN 107125-00-8 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2,4-dihydroxy- (9CI) (CA INDEX NAME)

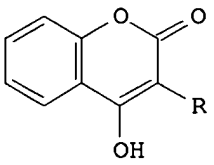


RN 107125-01-9 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 4-(acetyloxy)- (9CI)

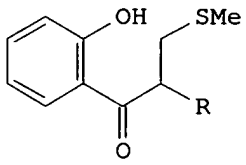
(CA INDEX NAME)



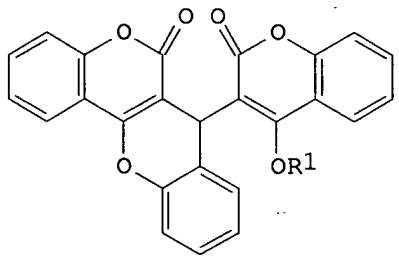
L12 ANSWER 31 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1985:220702 CAPLUS
DOCUMENT NUMBER: 102:220702
TITLE: Reaction of dimethyl sulfoxide and acetic anhydride with 3-substituted 4-hydroxycoumarins
AUTHOR(S): Khan, Khaliquz Zaman; Tasneem, Khalida; Rahman, Mujeebur; Prakash, Satya; Zaman, Asif
CORPORATE SOURCE: Dep. Res. Unani Med., Aligarh Muslim Univ., Aligarh, 202 001, India
SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1985), 24B(1), 42-6
CODEN: IJSBDB; ISSN: 0376-4699
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 102:220702
GI



I



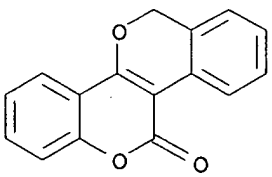
II



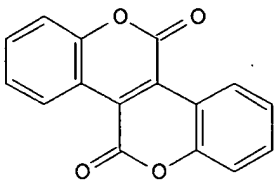
III

AB 4-Hydroxycoumarins I (R = Ph, allyl), treated with Me2SO-Ac2O, gave 2-hydroxyphenyl-1-methylthiopropan-3-ones II. The same reagent, modified by prior heating, reacted with 6H,7H-7-(4-hydroxy-3-coumaranyl)[1]benzopyrano[4,3-b][1]benzopyranone III (R1 = H) to give fragmentation products. Reagent unmodified by heating gave only O-acylation product III (R1 = Ac) with no fragmentation.

IT **96600-94-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 96600-94-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one (9CI) (CA INDEX NAME)



L2 ANSWER 32 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1985:166031 CAPLUS
DOCUMENT NUMBER: 102:166031
TITLE: Substituent effects and structure in substituted dibenzonaphthyrones
AUTHOR(S): Becker, Hans Dieter; Raston, Colin L.; Skelton, Brian W.; White, Allan H.
CORPORATE SOURCE: Dep. Org. Chem., Chalmers Univ. Technol., Goeteborg, S 41296, Swed.
SOURCE: Australian Journal of Chemistry (1985), 38(1), 97-110
CODEN: AJCHAS; ISSN: 0004-9425
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

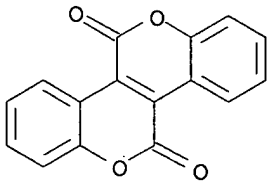


I

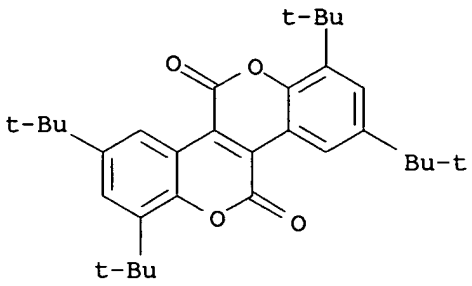
AB The crystal and mol. structures of dibenzonaphthyrone (I) and three of its sym. tetrasubstituted derivs. were determined by single-crystal x-ray diffraction methods. Only the tetra-tert-butyldibenzonaphthyrone deviates significantly from planarity by having the two carbonyl groups folded and syn-oriented relative to the plane of the connecting ethylene double bond. The dihedral angle between the two aromatic rings was 25°. The mol. geometry of all the other dibenzonaphthyrones in their crystalline states is characterized by planarity, and their structures are centrosym.

IT **13225-81-5 80360-50-5 80360-51-6**
80360-52-7
RL: PRP (Properties)
(crystal and mol. structure of, substituent effects on)

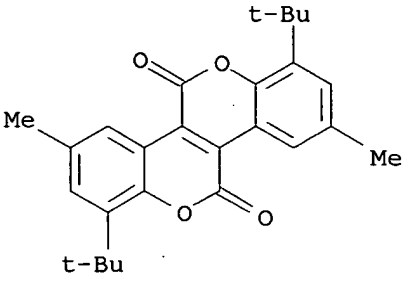
RN 13225-81-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



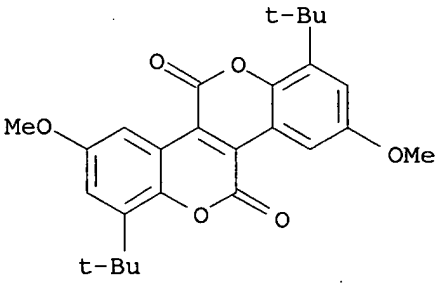
RN 80360-50-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,3,7,9-tetrakis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



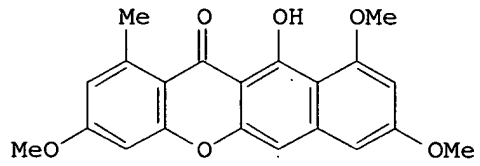
RN 80360-51-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-dimethyl- (9CI) (CA INDEX NAME)



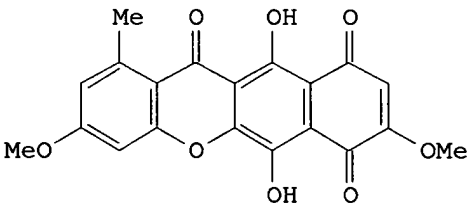
RN 80360-52-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-dimethoxy- (9CI) (CA INDEX NAME)



L22 ANSWER 33 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1984:120827 CAPLUS
DOCUMENT NUMBER: 100:120827
TITLE: A synthesis of bikaverin (7,12-dihydro-6,11-dihydroxy-3,8-dimethoxy-1-methyl-10H-benzo[b]xanthene-7,10,12-trione) and some related benzoxanthones and quinones
AUTHOR(S): Kjaer, Dana; Kjaer, Anders; Risbjerg, Elizabeth
CORPORATE SOURCE: Dep. Org. Chem., Tech. Univ. Denmark, Lyngby, 2800, Den.
SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1983), (11), 2815-20
CODEN: JCPRB4; ISSN: 0300-922X
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



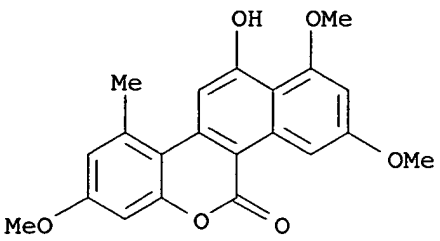
I



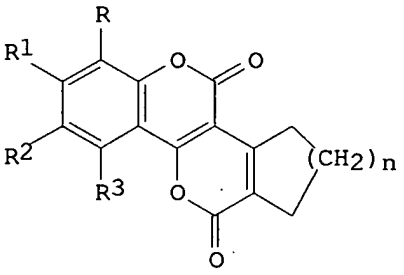
II

AB Cyclocondensation reaction of 2-hydroxy-4-methoxy-6-methylacetophenone with di-Me 3,5-dimethoxyhomophthalate and NaH in refluxing THF for 15 h gave 20-25% benzoxanthone I, which on oxidation with F3CC(O)OOH in CHCl3 at 0° for 6 h gave 38% bikaverin (II), a biol. interesting fungal pigment, and 37% of its 16-deoxy derivative Five other 11-hydroxybenzoxanthones were prepared by similar cyclocondensation of hydroxyacetophenones and di-Me homophthalates; 4 of these were oxidized to the corresponding quinones.

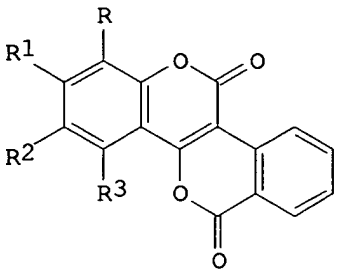
IT **89141-05-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 89141-05-9 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one, 12-hydroxy-1,3,8-trimethoxy-10-methyl- (9CI) (CA INDEX NAME)


OH
OMe
Me
OMe
MeO
O
O

L28 ANSWER 34 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1982:162487 CAPLUS
DOCUMENT NUMBER: 96:162487
TITLE: Pechmann reaction of 4-hydroxycoumarins and thiocoumarins with cyclohexanone and ethyl cyclopentanone-2-carboxylates
AUTHOR(S): Merchant, J. R.; Koshti, N. M.; Bakre, K. M.
CORPORATE SOURCE: Dep. Chem., Inst. Sci., Bombay, 400032, India
SOURCE: Journal of Heterocyclic Chemistry (1981), 18(8), 1655-8
CODEN: JHTCAD; ISSN: 0022-152X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 96:162487
GI



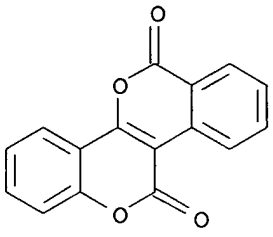
I



II

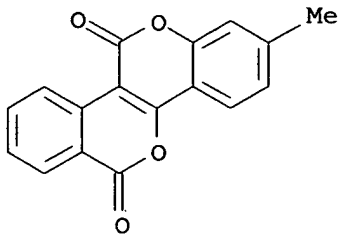
AB The Pechmann reaction of 4-hydroxycoumarins with Et cyclohexanone-2-carboxylate and Et cyclopentanone-2-carboxylate gave benzopyranopyrandiones I (R, R1, R2, R3 = H, Me; n = 2, 1; resp.). Dehydrogenation of I (n = 2) gave benzopyranobenzopyrandiones II. Anticoagulant activity of I was poor.

IT **2288-98-4P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)
RN 2288-98-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione (8CI, 9CI) (CA INDEX NAME)

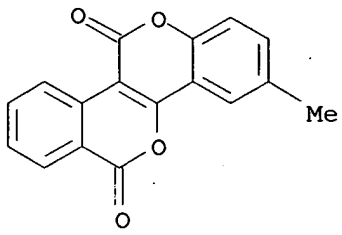


IT **27284-76-0P 27284-78-2P 27284-80-6P**
81450-24-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

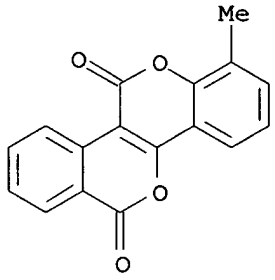
RN 27284-76-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-methyl- (8CI, 9CI)
(CA INDEX NAME)



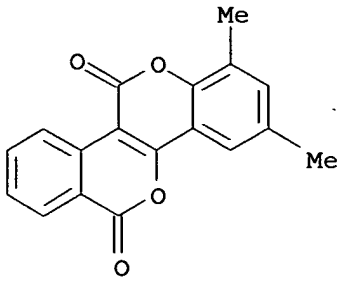
RN 27284-78-2 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-methyl- (8CI, 9CI)
(CA INDEX NAME)



RN 27284-80-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 1-methyl- (8CI, 9CI)
(CA INDEX NAME)



RN 81450-24-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 1,3-dimethyl- (9CI)
(CA INDEX NAME)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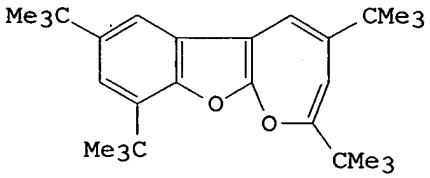
L2 ANSWER 35 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1982:104011 CAPLUS
DOCUMENT NUMBER: 96:104011
TITLE: Oxidative conversions of 2,2'-diphenoquinone valence isomers with 2,3-dichloro-5,6-dicyanobenzoquinone. Synthesis and spectroscopic properties of (E)-(3,3')dibenzofuranylidene-2,2'-diones (isoxindigos)
AUTHOR(S): Becker, Hans Dieter; Lingnert, Hans
CORPORATE SOURCE: Dep. Org. Chem., Chalmers Univ. Technol., Gothenburg, S-412 96, Swed.
SOURCE: Journal of Organic Chemistry (1982), 47(6), 1095-101
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 96:104011
GI



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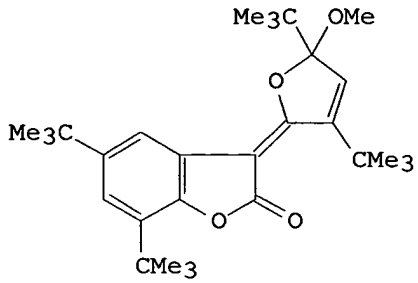
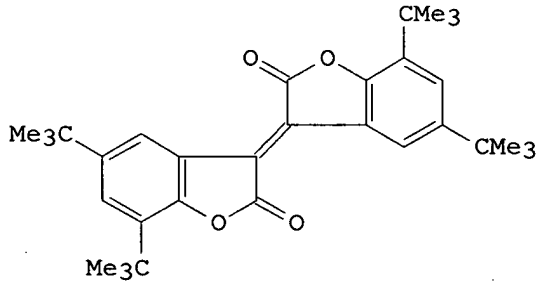


II



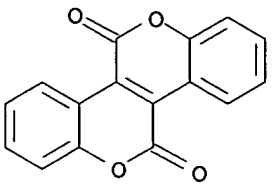
III

AB Oxepinobenzofurans (e.g. I), derived from tetraalkyl-substituted and dialkyldimethoxy-substituted 2,2'-diphenoquinones by spontaneous valence isomerization, react with 2,3-dichloro-5,6-dicyanobenzoquinone (DDQ) in the presence of water to give benzofuranyliden-2-ones (e.g. II) whose formation involves hydrolysis of the substrate ketal moiety. The course of the reaction and, consequently, the structure of the oxidation products depend on the nature of the substrate substituents. Upon exhaustive oxidation by DDQ, benzofuranylidenones are smoothly converted into isoxindigos (e.g. III). A mechanism for their formation involving hydration of the exocyclic double bond, oxidative coupling, and loss of the side chain by a retro-aldol reaction is proposed. The electron spectral properties of isoxindigos and those of their isomeric dibenzonaphthyrones are compared and discussed.

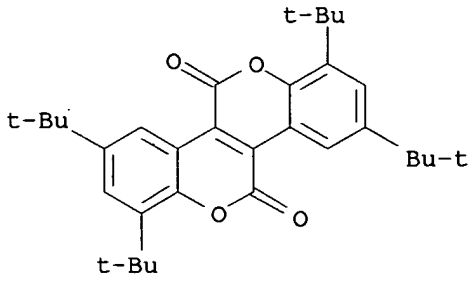
IT **13225-81-5P 80360-50-5P 80360-51-6P 80360-52-7P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)

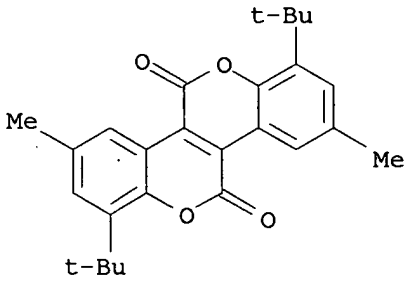
RN 13225-81-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



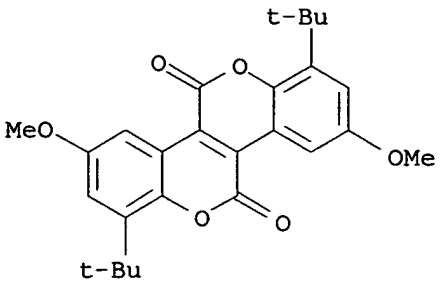
RN 80360-50-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,3,7,9-tetrakis(1,1-dimethylethyl)- (9CI) (CA INDEX NAME)



RN 80360-51-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-dimethyl- (9CI) (CA INDEX NAME)

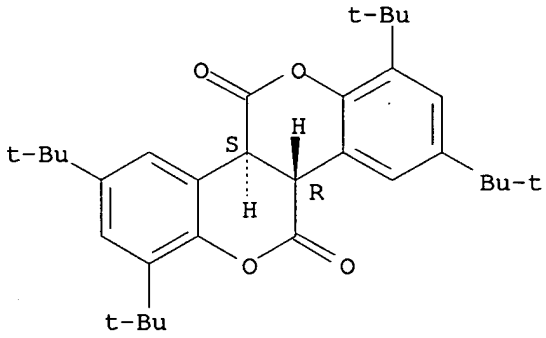


RN 80360-52-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,7-bis(1,1-dimethylethyl)-3,9-dimethoxy- (9CI) (CA INDEX NAME)



IT **80360-55-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 80360-55-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 1,3,7,9-tetrakis(1,1-dimethylethyl)-4b,10b-dihydro-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.

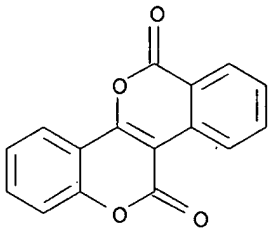


L2 ANSWER 36 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1981:30595 CAPLUS
DOCUMENT NUMBER: 94:30595
TITLE: Synthesis of isocoumarines from phenylmalonyl heterocyclics
AUTHOR(S): Stadlbauer, Wolfgang; Ghobrial, Nadia; Kappe, Thomas
CORPORATE SOURCE: Inst. Org. Chem., Univ. Graz, Graz, A-8010, Austria
SOURCE: Zeitschrift fuer Naturforschung, Teil B: Anorganische Chemie, Organische Chemie (1980), 35B(7), 892-5
CODEN: ZNBAD2; ISSN: 0340-5087
DOCUMENT TYPE: Journal
LANGUAGE: German
OTHER SOURCE(S): CASREACT 94:30595
GI

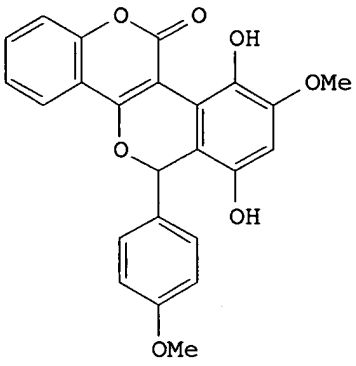
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Heating quinolones I (R = H, Me, Ph) with CO(OPh)2 in 10% Na2CO3 at 300° gave 6H-[2]benzopyrano[4,3-c]quinolines II in 71-82% yields. Similarly benzoquinolizinone III gave IV in 74% yield, phenalenones V (R1 = R2 = H; R1 = Ph, R2 = OH) gave 13-15% VI, and 2-phenyl-3-quinolinol gave 18% VII. Pyridones VIII (R3 = R4 = H, R5 = Me, R6 = CO2Et; R3 = R6 = H, R4 = R5 = Ph) gave VIII (R3 = R4 = Ph, R5 = Me, R6 = CO2Et; R3 = R4 = R5 = Ph, R6 = H) in 6% and 25% yields, resp. Heating quinolinone IX (R3 = H) with NaOAc or 4-MeC6H4SO3H gave 34% IX (R3 = Ph) and 6% IX (R3 = CO2Ph).

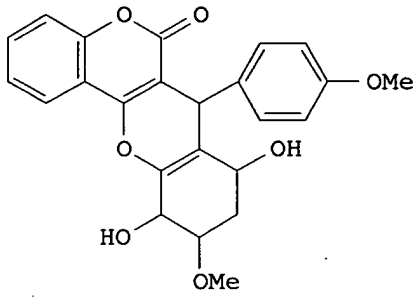
IT **2288-98-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 2288-98-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione (8CI, 9CI) (CA INDEX NAME)



L2X ANSWER 37 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1980:514350 CAPLUS
DOCUMENT NUMBER: 93:114350
TITLE: Quinones and quinone methides. VI. Reactions of 2-(arylmethyl)- and 2-(1-arylethyl)-1,4-benzoquinones with 4-hydroxy-2H-1-benzopyran-2-one
AUTHOR(S): Jurd, Leonard; Wong, Rosalind Y.
CORPORATE SOURCE: Sci. Educ. Adm., West. Reg. Res. Cent., Berkeley, CA, 94710, USA
SOURCE: Australian Journal of Chemistry (1980), 33(1), 137-54
CODEN: AJCHAS; ISSN: 0004-9425
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 93:114350
GI



III



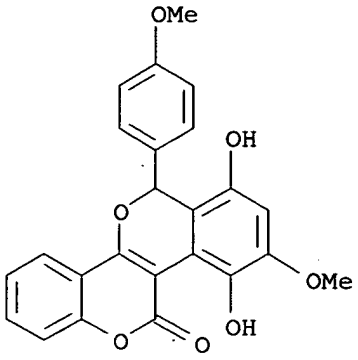
IV

AB In alc. KOH 2-methoxy-5-[(4-methoxyphenyl)methyl]-1,4-benzoquinone (I) reacted with 4-hydroxy-2H-1-benzopyran-2-one (II) to yield the quinol (III). In pyridine, however, I tautomerized the o-quinone methide which combined with II to yield IV. 2-(1-Arylethyl)-1,4-benzoquinones yielded quinols related to III in both alc. KOH and pyridine solns.; this indicates that quinone methides which might be formed from these quinones are relatively unreactive to nucleophiles.

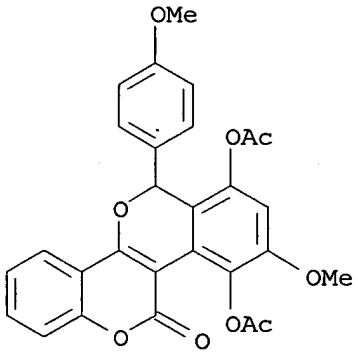
IT **74700-63-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and crystal structure of)

RN 74700-63-3 CAPLUS

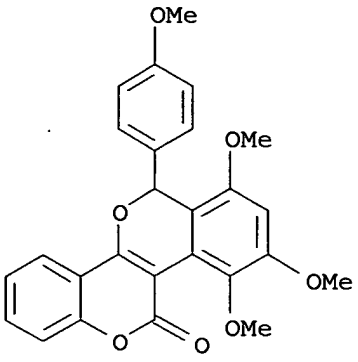
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,10-dihydroxy-8-methoxy-11-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



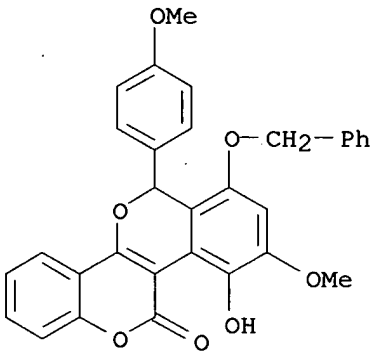
IT **74700-64-4P 74700-65-5P 74700-66-6P**
74700-68-8P 74700-69-9P 74700-70-2P
74700-71-3P 74700-72-4P 74700-74-6P
74700-75-7P 74700-76-8P 74700-78-0P
74700-79-1P 74701-00-1P 74726-30-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 74700-64-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,11-bis(acetyloxy)-8-methoxy-11-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



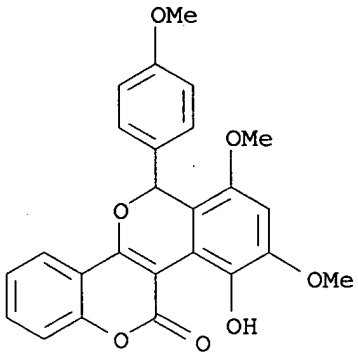
RN 74700-65-5 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,8,10-trimethoxy-11-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



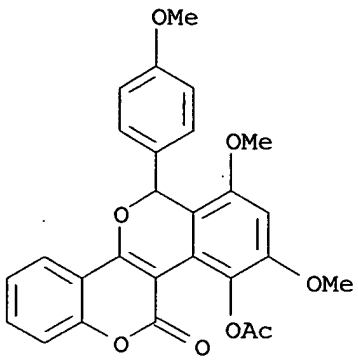
RN 74700-66-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7-hydroxy-8-methoxy-11-(4-methoxyphenyl)-10-(phenylmethoxy)- (9CI) (CA INDEX NAME)



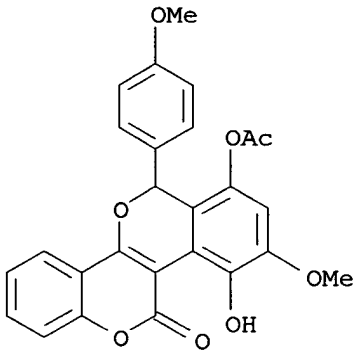
RN 74700-68-8 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7-hydroxy-8,10-dimethoxy-11-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



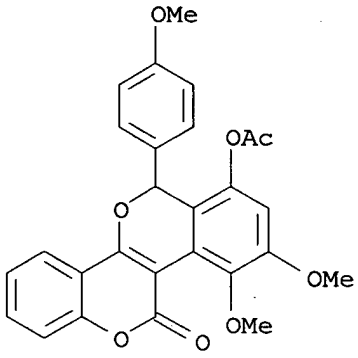
RN 74700-69-9 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7-(acetyloxy)-8,10-dimethoxy-11-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



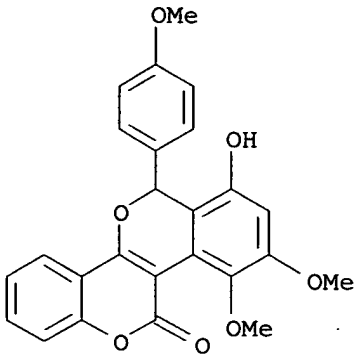
RN 74700-70-2 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 10-(acetyloxy)-7-hydroxy-8-methoxy-11-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



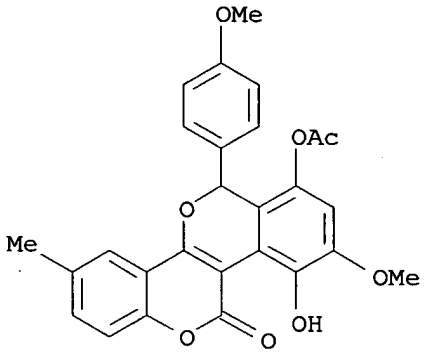
RN 74700-71-3 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 10-(acetyloxy)-7,8-dimethoxy-11-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



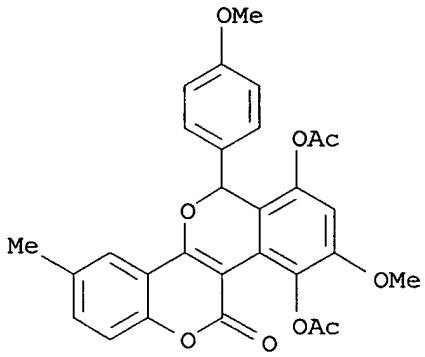
RN 74700-72-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 10-hydroxy-7,8-dimethoxy-11-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



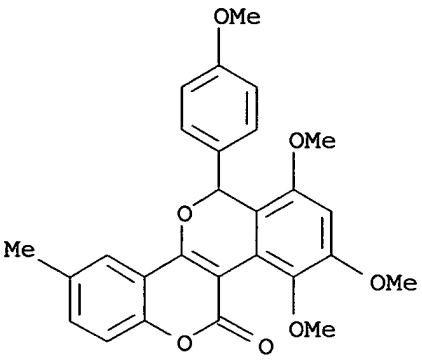
RN 74700-74-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 10-(acetyloxy)-7-hydroxy-8-methoxy-11-(4-methoxyphenyl)-2-methyl- (9CI) (CA INDEX NAME)



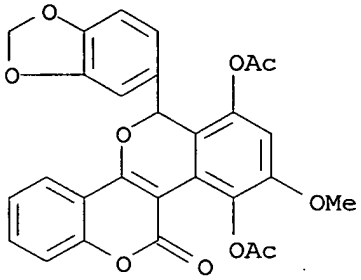
RN 74700-75-7 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,10-bis(acetyloxy)-8-methoxy-11-(4-methoxyphenyl)-2-methyl- (9CI) (CA INDEX NAME)



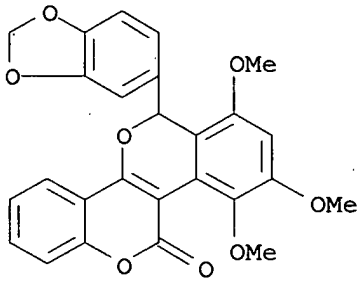
RN 74700-76-8 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,8,10-trimethoxy-11-(4-methoxyphenyl)-2-methyl- (9CI) (CA INDEX NAME)



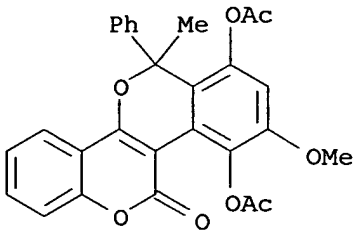
RN 74700-78-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,10-bis(acetyloxy)-11-(1,3-benzodioxol-5-yl)-8-methoxy- (9CI) (CA INDEX NAME)



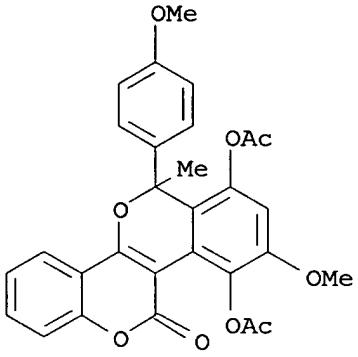
RN 74700-79-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 11-(1,3-benzodioxol-5-yl)-7,8,10-trimethoxy- (9CI) (CA INDEX NAME)



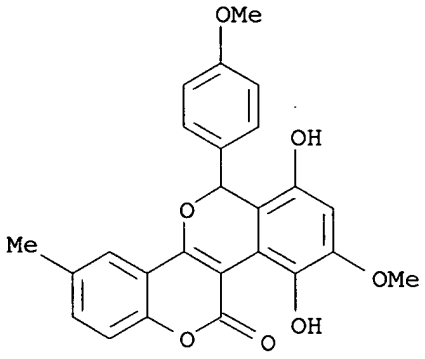
RN 74701-00-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,10-bis(acetyloxy)-8-methoxy-11-methyl-11-phenyl- (9CI) (CA INDEX NAME)



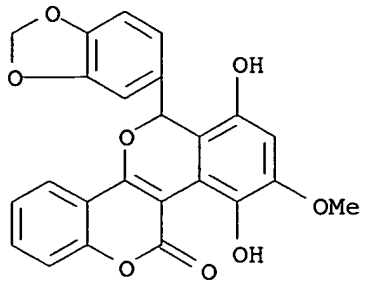
RN 74726-30-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-11-one, 7,10-bis(acetyloxy)-9-methoxy-6-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



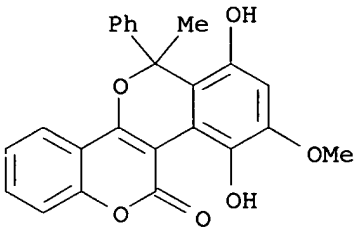
IT **74700-73-5P 74700-77-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, acetylation and methylation of)
RN 74700-73-5 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,10-dihydroxy-8-methoxy-11-(4-methoxyphenyl)-2-methyl- (9CI) (CA INDEX NAME)



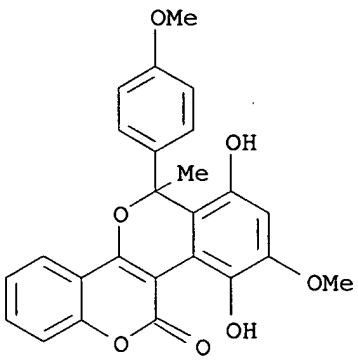
RN 74700-77-9 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 11-(1,3-benzodioxol-5-yl)-7,10-dihydroxy-8-methoxy- (9CI) (CA INDEX NAME)



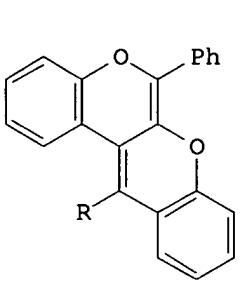
IT **74700-99-5P 74701-04-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, acetylation and oxidation of)
RN 74700-99-5 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,10-dihydroxy-8-methoxy-11-methyl-11-phenyl- (9CI) (CA INDEX NAME)



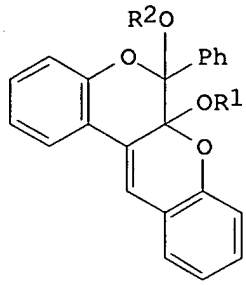
RN 74701-04-5 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6-one, 7,10-dihydroxy-8-methoxy-11-(4-methoxyphenyl)-11-methyl- (9CI) (CA INDEX NAME)



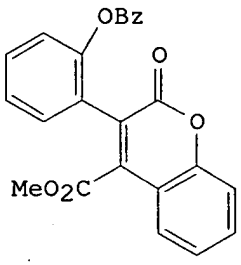
L22 ANSWER 38 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1980:76356 CAPLUS
DOCUMENT NUMBER: 92:76356
TITLE: Photooxygenation of flavanonol-red related compounds
AUTHOR(S): Shibata, Kozo; Ichikawa, Nobutaka; Kubota, Takashi
CORPORATE SOURCE: Fac. Sci., Osaka City Univ., Osaka, 558, Japan
SOURCE: Chemistry Letters (1979), (10), 1301-4
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



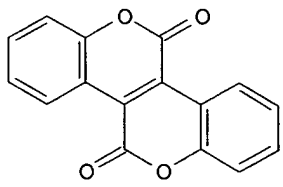
I



II



III



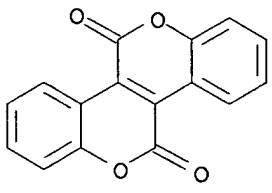
IV

AB Photolysis of the dioxabenzanthracene I (R = H) in EtOH in air gave II (R1 = R2 = Et) which underwent methanolysis to II (R1 = R2 = Me). Photooxidn. of I (R = H) in EtOH followed by recrystn. from MeOH gave II (R1 = Me, R2 = Et). I (R = CO2Me) was not photolyzed under the above conditions, but in the presence of Rose Bengal it gave the lactone III, which on alkaline hydrolysis gave the dilactone IV.

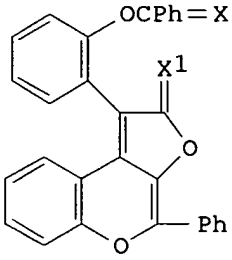
IT **13225-81-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 13225-81-5 CAPLUS

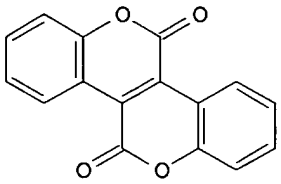
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



L22 ANSWER 39 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1979:474500 CAPLUS
DOCUMENT NUMBER: 91:74500
TITLE: Photooxygenation of flavanonol-red and unusual autoxidation of photoflavanonol-red
AUTHOR(S): Shibata, Kozo; Matsuo, Kotaro; Ichikawa, Nobutaka; Kubota, Takashi
CORPORATE SOURCE: Fac. Sci., Osaka City Univ., Osaka, 558, Japan
SOURCE: Chemistry Letters (1979), (5), 511-14
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I



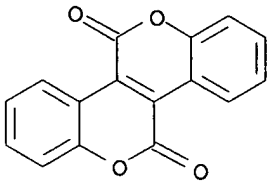
II

AB Photooxidn. of flavanonol red (I, XX1 = bond) occurred with singlet O to give photoflavanonol red (I, X = X1 = O). The latter compound autoxidized in alkaline solution to the dibenzonaphthyrone II.

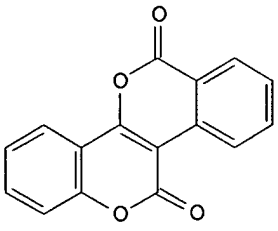
IT **13225-81-5P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, by autoxidn. of photoflavanonol red)

RN 13225-81-5 CAPLUS

CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



L42 ANSWER 40 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1979:103871 CAPLUS
DOCUMENT NUMBER: 90:103871
TITLE: A by-product in the synthesis of 4-hydroxy-3-phenylcoumarin
AUTHOR(S): Stadlbauer, Wolfgang; Kappe, Thomas
CORPORATE SOURCE: Inst. Org. Chem., Univ. Graz, Graz, Austria
SOURCE: Monatshefte fuer Chemie (1978), 109(6), 1485-7
CODEN: MOCMB7; ISSN: 0026-9247
DOCUMENT TYPE: Journal
LANGUAGE: German
GI



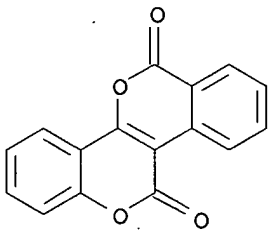
I

AB The synthesis of 4-hydroxy-3-phenylcoumarin (I) from PhOH and PhCH(CO2Et)2 yields the isocoumarin derivative II as a by-product (1-2%). If I is heated with PhCH(CO2Et)2 or di-Ph carbonate at 300° the coumarinoisocoumarin II is formed in 83% and 85% yield, resp.

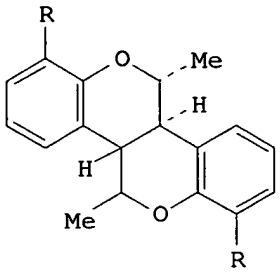
IT **2288-98-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 2288-98-4 CAPLUS

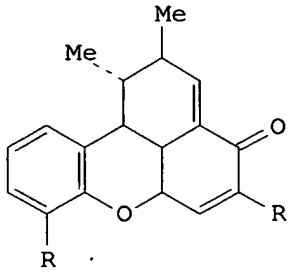
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione (8CI, 9CI) (CA INDEX NAME)



L22 ANSWER 41 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1978:120926 CAPLUS
DOCUMENT NUMBER: 88:120926
TITLE: Oxygen heterocycles by oxidation of ortho-alkylphenols. Oxidation of ortho-propenylphenols
AUTHOR(S): Cornia, Mara; Merlini, Lucio; Zanarotti, Antonio
CORPORATE SOURCE: Ist. Chim., Politec. Milano, Milan, Italy
SOURCE: Gazzetta Chimica Italiana (1977), 107(5-6), 299-304
CODEN: GCITA9; ISSN: 0016-5603
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 88:120926
GI



IV

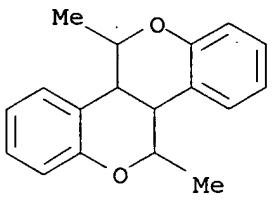


V

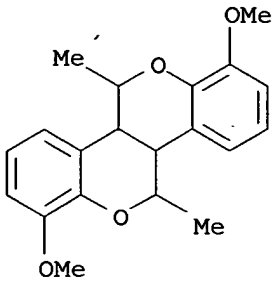
AB Oxidation of 2-propenylphenols by DDQ (I), Ag2O (II), or PdCl2 (III) was studied. I acts as a 2-electron oxidant to form chromenes or spirodibenzopyrans. Use of II gave benzopyranobenzopyrans, e.g., IV (R = Me, H), benzoxanthenones V, and dihydrobenzopyrans via radical phenol coupling. III was inactive except with 2-MeCH:CPhC6H4OH which gave 2-methyl-3-phenylbenzopyran.

IT **65769-00-8P 65769-04-2P 65769-06-4P**
65769-07-5P 65831-96-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

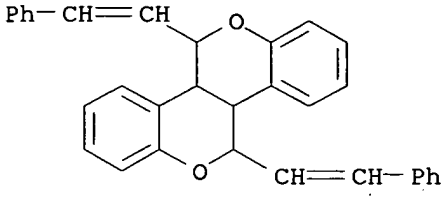
RN 65769-00-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran, 4b,5,10b,11-tetrahydro-5,11-dimethyl-, (4bα,5α,10bβ,11β)- (9CI) (CA INDEX NAME)



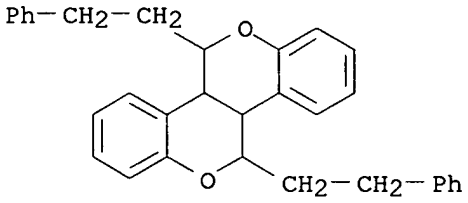
RN 65769-04-2 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran, 4b,5,10b,11-tetrahydro-1,7-dimethoxy-5,11-dimethyl-, (4bα,5α,10bβ,11β)- (9CI) (CA INDEX NAME)



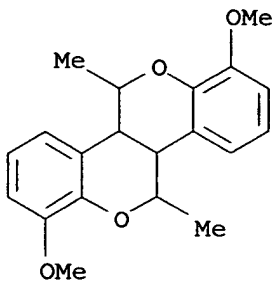
RN 65769-06-4 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran, 4b,5,10b,11-tetrahydro-5,11-bis(2-phenylethenyl)-, [4bα,5α(E),10bβ,11β(E)]- (9CI) (CA INDEX NAME)



RN 65769-07-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran, 4b,5,10b,11-tetrahydro-5,11-bis(2-phenylethyl)-, (4bα,5α,10bβ,11β)- (9CI) (CA INDEX NAME)



RN 65831-96-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran, 4b,5,10b,11-tetrahydro-1,7-dimethoxy-5,11-dimethyl-, (4bα,5α,10bα,11α)- (9CI) (CA INDEX NAME)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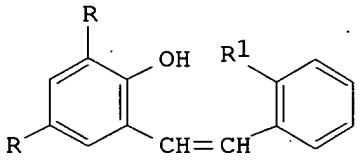
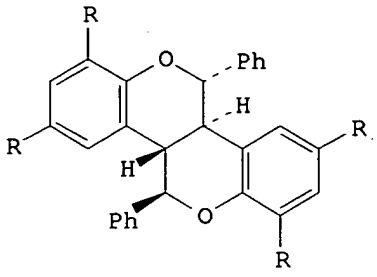
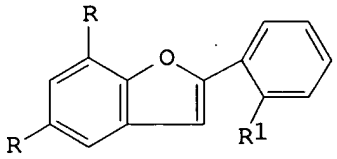
L22 ANSWER 42 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1976:421173 CAPLUS
DOCUMENT NUMBER: 85:21173
TITLE: Synthesis of oxygen heterocycles by oxidation of ortho-alkylphenols: 2-arylbenzofurans, 4b,9b-dihydrobenzofuro[3,2-b]benzofuran and 4b,5,10b,11-tetrahydropyrano[4,3-c]benzopyrans from hydroxystilbenes
AUTHOR(S): Cardillo, Barbara; Cornia, Mara; Merlini, Lucio
CORPORATE SOURCE: Ist. Chim., Politec. Milano, Milan, Italy
SOURCE: Gazzetta Chimica Italiana (1975), 105(11-12), 1151-63
CODEN: GCITA9; ISSN: 0016-5603
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 85:21173
GI



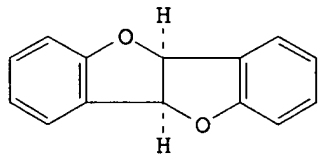
I



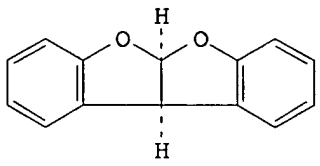
III



IV



VI



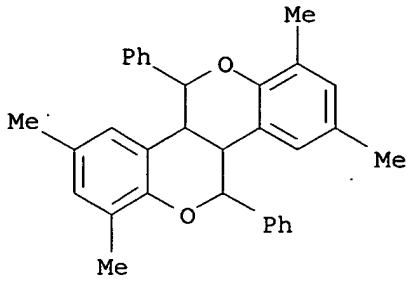
VII

AB Oxidation of hydroxystilbenes I (R = H, Me; R1 = H) with Ag2O or 2,3-dichloro-5,6-dicyanobenzoquinone (II) gave benzopyranobenzopyrans III (R = H, Me), but PdCl2 in aqueous MeOH and AcONa gave benzofuran IV (R = Me, R1 = H). These reactions with I (R = H, R1 = OH) gave mixts. of benzofuran IV (R = H, R1 = OH) (V) and benzofurobenzofuran VI, but treatment of (2-HOC6H4CH2)2 gave a mixture of V and its 2,3-dihydro derivative 2-HOC6H4CHO was reduced with Zn-AcOH to give benzofurobenzofuran VII and V.

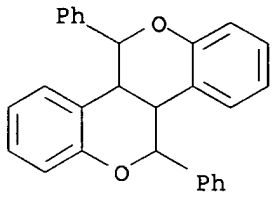
IT **54497-37-9P 59483-18-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 54497-37-9 CAPLUS

CN [1]Benzopyrano[4,3-c][1]benzopyran, 4b,5,10b,11-tetrahydro-1,3,7,9-tetramethyl-5,11-diphenyl-, (4bα,5α,10bβ,11β)- (9CI) (CA INDEX NAME)



RN 59483-18-0 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran, 4b,5,10b,11-tetrahydro-5,11-diphenyl- (9CI) (CA INDEX NAME)

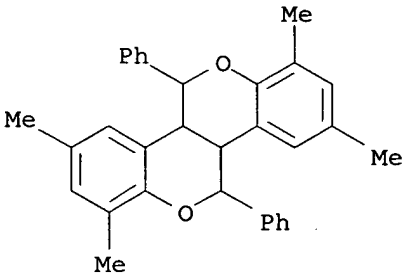


L2X ANSWER 43 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1975:50153 CAPLUS
DOCUMENT NUMBER: 82:50153
TITLE: 1,3,7,9-tetramethyl-5,11-diphenyl[1]benzopyrano[4,3-c][1]benzopyran, C32H30O2
AUTHOR(S): Andreetti, G. D.; Bocelli, G.; Coghi, L.; Sgarakotto, P.
CORPORATE SOURCE: Ist. Strutturistica Chim., Univ. Parma, Parma, Italy
SOURCE: Crystal Structure Communications (1974), 3(4), 761-4
CODEN: CSCMCS; ISSN: 0302-1742
DOCUMENT TYPE: Journal
LANGUAGE: English

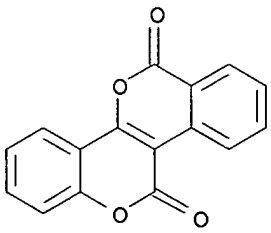
AB Crystals of the title compound have space group P21/c, with a 13.54(1), b 5.270(5), c 21.29(2) Å, β 128.7(2)°, and Z = 2. The structure was solved by direct methods through the weighted numerical addition procedure and refined by block-diagonal least squares. The final conventional R factor is 0.044. The mol. lies on a crystallog. center of symmetry. The central pyran rings have boat conformation with their 4 H atoms trans to each other. The Ph and pyran rings have a dihedral angle of 87.9°. Packing is consistent with van der Waals interactions.

IT **54497-37-9**
RL: PRP (Properties)
(crystal structure of)

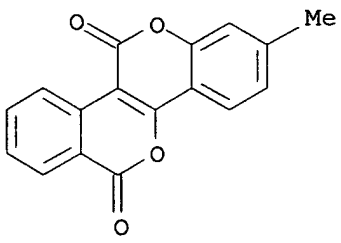
RN 54497-37-9 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran, 4b,5,10b,11-tetrahydro-1,3,7,9-tetramethyl-5,11-diphenyl-, (4bα,5α,10bβ,11β)- (9CI)
(CA INDEX NAME)



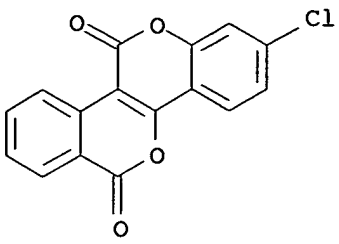
L22 ANSWER 44 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1973:526351 CAPLUS
DOCUMENT NUMBER: 79:126351
TITLE: One-step synthesis of coumarino(3,4:4',3')isocoumarins
AUTHOR(S): Darbarwar, Malleshwar; Sundaramurthy, V.; Rao, N. V. Subba
CORPORATE SOURCE: Dep. Chem., Osmania Univ., Hyderabad, India
SOURCE: Indian Journal of Chemistry (1973), 11(7), 637-40
CODEN: IJOCAP; ISSN: 0019-5103
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB The condensation of the sodium salt of 4-hydroxycoumarin and 2-BrC6H4CO2H in aqueous solution under the catalytic influence of CuSO4 gave coumarino[3,4:4',3']isocoumarin (I) on the basis of uv, ir, and mass spectra. The general applicability of the reaction was established.
IT **2288-98-4P 27284-76-0P 27284-77-1P**
27284-78-2P 27284-79-3P 27284-80-6P
49634-80-2P 49634-81-3P 49634-82-4P
49634-83-5P 49634-84-6P 49634-85-7P
49634-86-8P 49634-87-9P 49686-95-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 2288-98-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione (8CI, 9CI) (CA INDEX NAME)



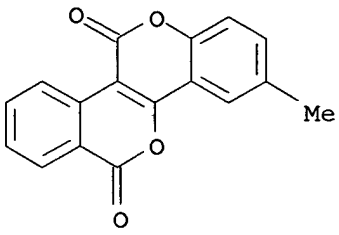
RN 27284-76-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-methyl- (8CI, 9CI) (CA INDEX NAME)



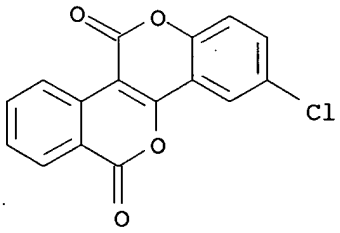
RN 27284-77-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-chloro- (8CI, 9CI) (CA INDEX NAME)



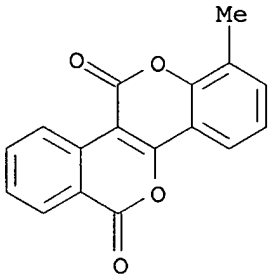
RN 27284-78-2 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-methyl- (8CI, 9CI)
(CA INDEX NAME)



RN 27284-79-3 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-chloro- (8CI, 9CI)
(CA INDEX NAME)

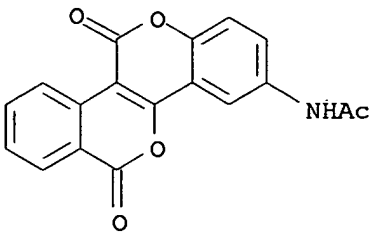


RN 27284-80-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 1-methyl- (8CI, 9CI)
(CA INDEX NAME)

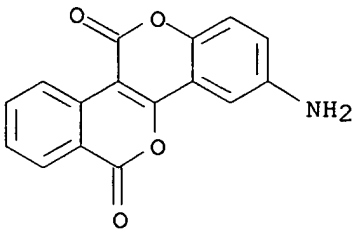


RN 49634-80-2 CAPLUS

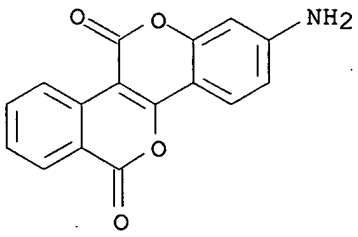
CN Acetamide, N-(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-3-yl)-
(9CI) (CA INDEX NAME)



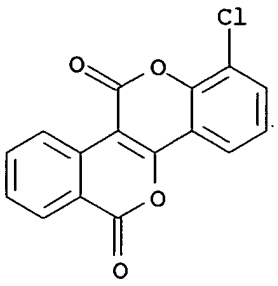
RN 49634-81-3 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-amino- (9CI) (CA
INDEX NAME)



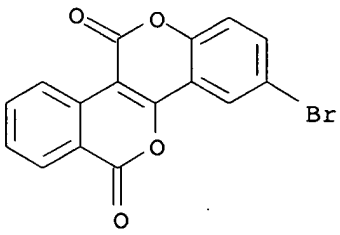
RN 49634-82-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-amino- (9CI) (CA
INDEX NAME)



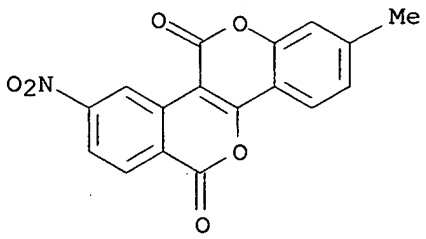
RN 49634-83-5 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 1-chloro- (9CI) (CA
INDEX NAME)



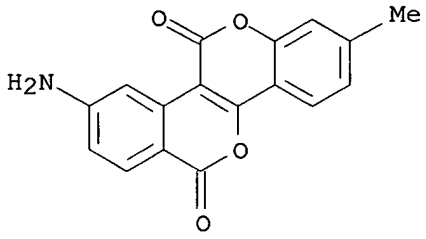
RN 49634-84-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-bromo- (9CI) (CA INDEX NAME)



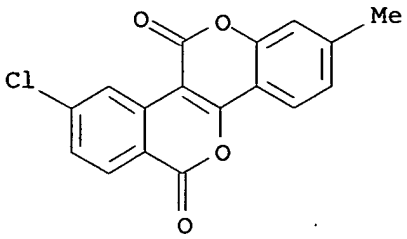
RN 49634-85-7 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-methyl-9-nitro- (9CI) (CA INDEX NAME)



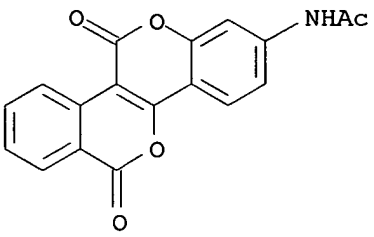
RN 49634-86-8 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 9-amino-2-methyl- (9CI) (CA INDEX NAME)



RN 49634-87-9 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 9-chloro-2-methyl- (9CI) (CA INDEX NAME)



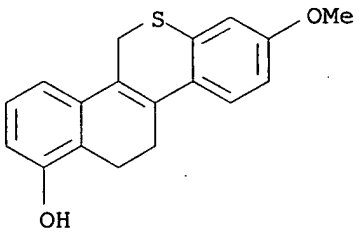
RN 49686-95-5 CAPLUS
CN Acetamide, N-(6,11-dioxo-6H,11H-[2]benzopyrano[4,3-c][1]benzopyran-2-yl)- (9CI) (CA INDEX NAME)



L22 ANSWER 45 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1972:514640 CAPLUS
DOCUMENT NUMBER: 77:114640
TITLE: Heterocyclic steroids. XXV. Total synthesis of modified 6-thiaestrogens
AUTHOR(S): Koenst, W. M. B.; Van Bruynsvoort, Mrs. J.; Speckamp, W. N.; Huisman, H. O.
CORPORATE SOURCE: Lab. Org. Chem., Univ. Amsterdam, Amsterdam, Neth.
SOURCE: Recueil des Travaux Chimiques des Pays-Bas (1972), 91(7), 869-82
CODEN: RTCPA3; ISSN: 0165-0513
DOCUMENT TYPE: Journal
LANGUAGE: English

AB 6-Thiasteroids have been totally synthesized by the reaction of 2-substituted 1,3-cyclopentanediones with 4-hydroxy-4-vinylthiochromans or with the derived isothiuronium salts. Modifications of the C-13 substituent have also been carried out via the Tl salt of the 18-nor-8,14-secosteroid. When using 2-chloro- and 2-acetylamino-1,3-cyclopentanediones anomalous reaction products were obtained.

IT **28105-10-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 28105-10-4 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]thiopyran-1-ol, 11,12-dihydro-8-methoxy- (8CI, 9CI) (CA INDEX NAME)

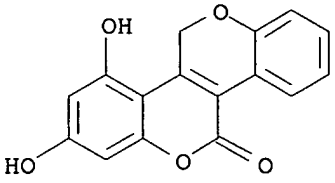


L22 ANSWER 46 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1971:87870 CAPLUS
DOCUMENT NUMBER: 74:87870
TITLE: New route to dehydrorotenone and other rotenoids
AUTHOR(S): Baran-Marszak, Maurice; Massicot, Jacques; Molho, Darius
CORPORATE SOURCE: Lab. Chim. Appl. Corps Organise, Museum Natl. Hist. Nat., Paris, Fr.
SOURCE: Bulletin de la Societe Chimique de France (1971), (1), 191-8
CODEN: BSCFAS; ISSN: 0037-8968
DOCUMENT TYPE: Journal
LANGUAGE: French

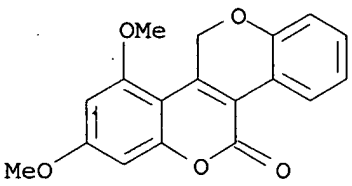
AB The thermal condensation of alkyl 3-chromanone-4-carboxylates with phenols resulted in dehydrorotenoids. The condensation of 6,7-methoxy-4-(ethoxycarbonyl)-3-chromanone with tubanol gave dehydrorotenone. Also prepared were dehydromunduserone, de-hydrosermundone, and dehydroapotoxicarol.

IT **30990-38-6P 30990-39-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

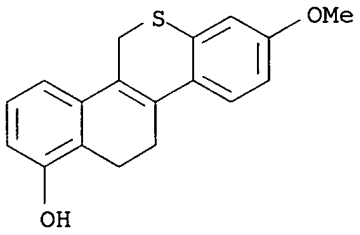
RN 30990-38-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 8,10-dihydroxy- (8CI) (CA INDEX NAME)



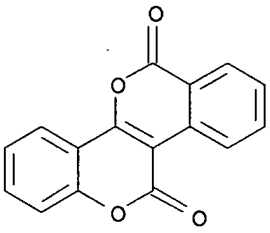
RN 30990-39-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5(11H)-one, 8,10-dimethoxy- (8CI) (CA INDEX NAME)



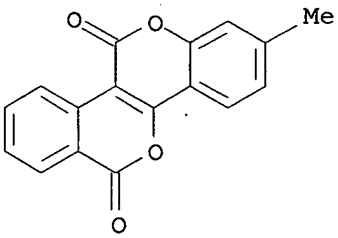
L22 ANSWER 47 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1970:456292 CAPLUS
DOCUMENT NUMBER: 73:56292
TITLE: Heterocyclic steroids. XVII. Anomalous spiro- and aromatized 6-thiaestrogens
AUTHOR(S): Koenst, W. M. B.; Van-Bruynsvoort, Mrs. J. L.; Speckamp, Willem N.; Huisman, Henderikus O.
CORPORATE SOURCE: Lab. Org. Chem., Univ. Amsterdam, Amsterdam, Neth.
SOURCE: Tetrahedron Letters (1970), (29), 2527-30
CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB Reaction of I with II (from III) in Me2CHOH-H2O gave IV, which was cyclized (HCl-dioxane) to V. On recrystn. of V from MeOH, V gave VI, which was dehydrated by HCl-dioxane to VII. Analogous reaction series starting with VIII and II gave IX which was cyclized (HCl-dioxan) to give X. Aromatization of X with acid gave XI. The reaction of III and XII in xylene or MeNO2 at 120° gave XIII, while the reaction at 90° gave XIV. III and XV in refluxing MeNO2 gave XVI.
IT **28105-10-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 28105-10-4 CAPLUS
CN 5H-Benzo[b]naphtho[2,1-d]thiopyran-1-ol, 11,12-dihydro-8-methoxy- (8CI, 9CI) (CA INDEX NAME)



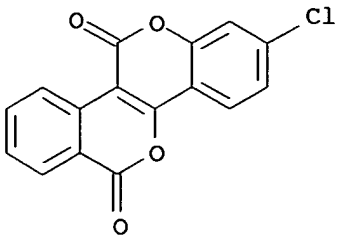
L22 ANSWER 48 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1970:121394 CAPLUS
DOCUMENT NUMBER: 72:121394
TITLE: Synthesis of coumarino[3,4:2',3']isocoumarins
AUTHOR(S): Darbarwar, Malleshwar; Sundaramurthy, V.; Rao, Nandury V. S.
CORPORATE SOURCE: Dep. Chem., Osmania Univ., Hyderabad, India
SOURCE: Indian Journal of Chemistry (1970), 8(2), 197-8
CODEN: IJOCAP; ISSN: 0019-5103
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB A number of substituted 4-hydroxycoumarins have been condensed with o-bromobenzoic acid in alkaline medium under the catalytic influence of aqueous CuSO4. The compds. obtained have been characterized as coumarino-[3,4:2',3']isocoumarins (I, R = Me, Cl) on the basis of ir and mass spectral data.
IT **2288-98-4P 27284-76-0P 27284-77-1P**
27284-78-2P 27284-79-3P 27284-80-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 2288-98-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione (8CI, 9CI) (CA INDEX NAME)



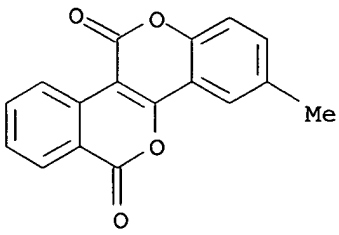
RN 27284-76-0 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-methyl- (8CI, 9CI) (CA INDEX NAME)



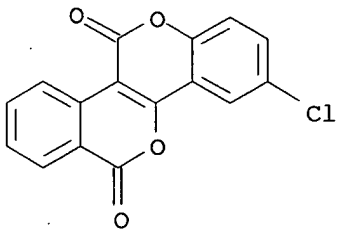
RN 27284-77-1 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 2-chloro- (8CI, 9CI) (CA INDEX NAME)



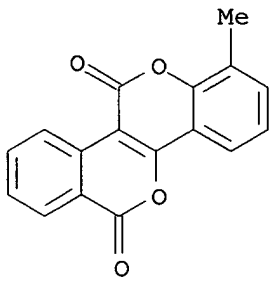
RN 27284-78-2 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-methyl- (8CI, 9CI)
(CA INDEX NAME)



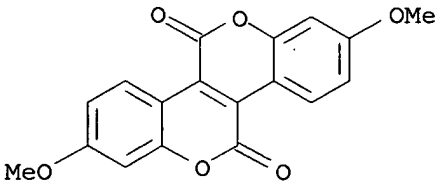
RN 27284-79-3 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 3-chloro- (8CI, 9CI)
(CA INDEX NAME)



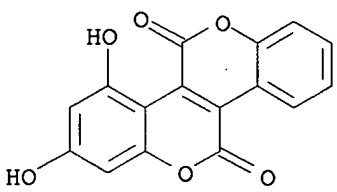
RN 27284-80-6 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione, 1-methyl- (8CI, 9CI)
(CA INDEX NAME).



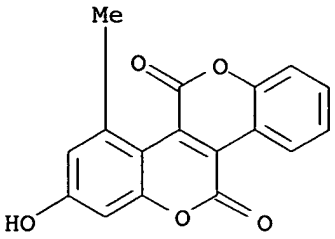
L22 ANSWER 49 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1968:496520 CAPLUS
DOCUMENT NUMBER: 69:96520
TITLE: Dibenzonaphthyrones and related compounds
AUTHOR(S): Chatterjea, J. N.; Prasad, N.
CORPORATE SOURCE: Patna Univ., Patna, India
SOURCE: Journal of the Indian Chemical Society (1968), 45(1), 35-44
CODEN: JICSAH; ISSN: 0019-4522
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB New syntheses of dibenzonaphthyrones (I) have been carried out from 2,2-dimethoxysuccinonitrile and trans-2,2-dimethoxydicyanostilbene. Several derivs. of dibenzonaphthyrone have been synthesized from 3-(2-methoxyphenyl)-4-ethoxycarbonylcoumarins prepared by the method of Borsche and Wannagat (1950). The structures have been confirmed by independent conventional syntheses. Borsche and Wannagat's synthesis of 3-phenylcoumarin-4-carboxylic acid has been extended to show that if α-acetylphenylacetonitrile is employed in place of Et phenylcyanopyruvate, good yields of 3-phenyl-4-methylcoumarins are obtained.
IT **20503-13-3P 20503-15-5P 20503-18-8P 20589-90-6P 20589-91-7P 20752-64-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 20503-13-3 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 2,8-dimethoxy- (8CI) (CA INDEX NAME)



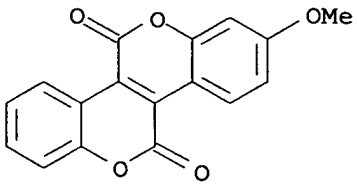
RN 20503-15-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 2,4-dihydroxy- (8CI, 9CI) (CA INDEX NAME)



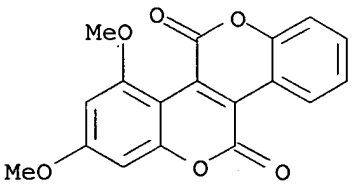
RN 20503-18-8 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 2-hydroxy-4-methyl- (8CI) (CA INDEX NAME)



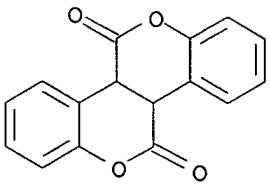
RN 20589-90-6 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 2-methoxy- (8CI) (CA INDEX NAME)



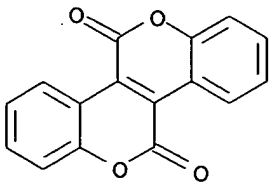
RN 20589-91-7 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 2,4-dimethoxy- (8CI) (CA INDEX NAME)



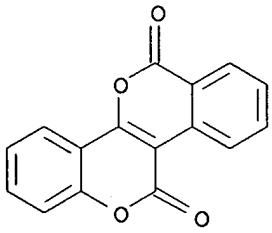
RN 20752-64-1 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 4b,10b-dihydro- (8CI) (CA INDEX NAME)



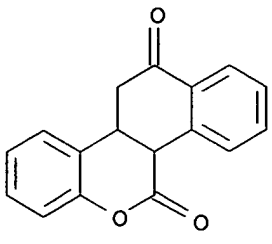
L22 ANSWER 50 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1967:18650 CAPLUS
DOCUMENT NUMBER: 66:18650
TITLE: Structure of flavanonol-red
AUTHOR(S): Kubota, Takashi; Ichikawa, Nobutaka; Matsuo, K.; Shibata, Kazuhiro
CORPORATE SOURCE: City Univ. Osaka, Osaka, Japan
SOURCE: Tetrahedron Letters (1966), (39), 4671-4
CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB cf. CA 36, 41188. Flavanonols (flavanonol, m. 208-10°; 4'-bromo-3-hydroxyflavanone, m. 299-300°; ampeloptin, m. 223-4°) boiled with Ac2O and NaOAc gave a series of red pigments. Similar treatment of 3-hydroxyflavanone gave the title compound (I), hydrogenated in dioxane over prereduced PtO2 with 3 moles H to a hexahydro compound (II), m. 183-4°, showing no HO, AcO, or CO absorption in the ir spectrum. Ozonization of I followed by reductive decomposition gave PhCH2OH and o-HOC6H4CO2H. Hydrogenolysis of I with Na-liquid NH3 according to Tomita, et al. (CA 46, 5060g) gave a dihydroxy compound (III), C30H26O3, m. 154-5°; diacetate, m. 110-12°. I heated 1 hr. in AcOH containing H2SO4 gave a good yield of a dioxo-diphenol (IV, R = H) (V), m. 211-12° (decomposition), pos. test with ferricyanide and ferric salts; diacetate IV (R = Ac) (VI), m. 162.5-3.0°; di-Me ether IV (R = Me) (VII), m. 194-5°. V boiled in Ac2O-NaOAc did not regenerate I but only formed VI. Catalytic reduction of VI over Pd-C gave III diacetate. Catalytic reduction of VII gave a tetrahydro derivative, m. 99-100°, showing no ir OH or CO absorption. Reduction of VII with NaBH4 in boiling dioxane-MeOH gave a dihydroxydimethyl ether, m. 178-9° (decomposition), ν 3300 cm.-1 (no absorption at 1660 or 880 cm.-1) also obtained by reduction of VII with LiAlH4 in the cold. Ozonolysis of VII gave BzOH and a yellow crystalline anhydride (VIII, R = Me), m. 159-60°, identifying the compound as bis(o-methoxyphenyl)maleic anhydride, also synthesized from o-MeOC6H4CHO. The data suggested the assigned formulation for I and its derivs. but do not exclude the alternative formula (IX). I in EtOAc irradiated with sunlight or uv light in air at 20° gave green crystalline photoflavanol-red (X), m. 218-20°, hydrolyzed in alkali to give equimolar amts. of BzOH and a hydroxy compound (XI, R = H) (XII), m. 275-80°, reconverted to X by benzoylation. XII treated with Me2SO4 and K2CO3 in anhydrous Me2CO gave the monomethyl ether XI (R = Me) (XIII), m. 182-3°. XII oxidized with KMnO4-Me2CO or by air in a mixture of aqueous NaOH, tetrahydrofuran, and alc. under reflux gave BzOH and the known (Chovin, CA 37, 27371) dilactone (XIV), m. 295-6°. XIII was ozonized to give BzOMe and the anhydride VIII (R = H), m. 160-1°, ν 760 cm.-1, converted to VIII (R = Me) by methylation with alkaline Me2SO4. Formation of BzOMe in the ozonolysis of XIII excluded the alternative formulation IX but all the above reactions supported the assigned formula I.
IT **13225-81-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 13225-81-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



L22 ANSWER 51 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1965:439038 CAPLUS
DOCUMENT NUMBER: 63:39038
ORIGINAL REFERENCE NO.: 63:6981f-h
TITLE: Isocoumarino[3,4:4',3']coumarin
AUTHOR(S): Chatterjea, J. N.; Banerjee, B. K.; Prasad, N.
CORPORATE SOURCE: Sci. Coll., Patna
SOURCE: J. Indian Chem. Soc. (1965), 42(5), 283-8
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB I [R = o-MeOC6H4, R' = CN (II)] (0.1 g.) and 1 g. C5H5N.HCl heated at 210-20° for 1 hr. under CO2 gave quant. III [A = O (IV)], m. 282° (AcOH), λ 5.72 and 5.89 μ (C:O). IV heated with MeOH-NH3 for 30 hrs. at 100° produced III (A = NH), m. 310°. The preparation of II, m. 175-6°, represented an extension of the isocoumarin synthesis of Chatterjea (CA 48, 7003d), and was obtained by refluxing 1.3 g. o-NCCH2C6H4CO2Me, 1.6 g. o-MeOC6H4CO2Et, 0.23 g. NaH, and 40 ml. anhydrous C6H6 for 18 hrs. Other I derivs. prepared were as follows (R, R', and m.p. given): H, CN, 156°; H, CO2H, 250°; H, H,-; C2Et, CN, 173°; CO2H, H, 243°; Ph, CN, 205°. In an attempt to prepare the dimer of bicyclo[4.2.0]octa-1,3,5-triene7,8-dione (V) isolated by Cava, et al. (CA 59, 3843e), o-OCHC6H4-CO2Me was treated with KCN-EtOH and found to give not V but Δ3,3'-biphthalide (VI). Both V and VI treated with alkali produced 3-hydroxy-3,3'-biphthalide. Me opianate in a min. quantity of 50% EtOH warmed 30 min. with KCN gave 6,6',7,7'-tetramethoxy-Δ3,3'-biphthalide, m. 305°.
IT **2288-98-4**, α,2-Stilbenedicarboxylic acid, α',2'-dihydroxy-, di-δ-lactone
(preparation of)
RN 2288-98-4 CAPLUS
CN 6H,11H-[2]Benzopyrano[4,3-c][1]benzopyran-6,11-dione (8CI, 9CI) (CA INDEX NAME)



L22 ANSWER 52 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1965:74100 CAPLUS
DOCUMENT NUMBER: 62:74100
ORIGINAL REFERENCE NO.: 62:13115e-h,13116a-b
TITLE: Cyclic condensation of homophthalic acid dimethyl ester with α,β-unsaturated carbonyl compounds
AUTHOR(S): Eisenhuth, W.; Renfroe, H. B.; Schmid, H.
CORPORATE SOURCE: Univ. Zurich, Switz.
SOURCE: Helvetica Chimica Acta (1965), 48(2), 375-9
CODEN: HCACAV; ISSN: 0018-019X
DOCUMENT TYPE: Journal
LANGUAGE: German
OTHER SOURCE(S): CASREACT 62:74100
GI For diagram(s), see printed CA Issue.
AB o-C6H4(CH2CO2Me)CO2Me (I) (395 mg.) and 220 mg. MeCH:CHCO2Me was heated 4 hrs. at 95° in 1 ml. absolute MeOH containing 92 mg. Na and worked up to give 240 mg. II (R = Me), m. 52-60° (Et2O-C5H12 at -20°); it gave a deep violet FeCl3 color reaction. Similarly, 219 mg. I, 159 mg. di-Me maleate and 51 mg. Na in 1 ml. MeOH kept overnight gave 179 mg. II (R = CO2Me), m. 118-20° (Et2O). I and PhCH:CHCO2Me gave 55.5% II (R = Ph), m. 121-31° (CH2Cl2-C5H12); FeCl3 reaction violet. I (1.07 g.), 787 mg. coumarin, and 302 mg. Na in 3 ml. MeOH 8 hrs. at 90-5° gave 39% III, m. 140-70° (CH2Cl2-Et2O); FeCl3 reaction red violet. Acidification of the reaction mixture sometimes gave a product, m. 178-81°, which on distillation in high vacuum gave III. III (200 mg.) and 1 g. chloranil in 4 ml. PhMe heated 6 hrs. at 145°, or in 4 ml. xylene 2.5 hrs. at 160°, and sublimation (170-200°) of the residue of the evaporated solution gave 83% IV (R = CO2Me, R' = H) (V), m. 211-12° (CH2Cl2-EtOH); FeCl3 color in HCONMe2-H2O dark green. V (1.35 g.), 5 ml. MeI, and 6.5 g. K2CO3 in 50 ml. dry Me2CO refluxed 15 hrs. with the addition of another 5 ml. MeI after 7 hrs. gave 85.2% IV (R = CO2Me, R1 = Me) (VI), m. 162-4° (CH2Cl2-Et2O). V (54 mg.) warmed slightly with 2 ml. concentrated H2SO4, and the mixture kept 0.5 hr. at 20° and poured onto ice gave 44.5% IV (R = R1 = H) (VII), yellow-green, m. 206-7° (CH2Cl2-Et2O); FeCl3 color in EtOH deep green. VII was also obtained in 80.5% yield by heating 103 mg. III with 3.5 ml. polyphosphoric acid (PPA). VI heated 9 hrs. with PPA at 100-5° gave VII. III (103 mg.) was kept in excess 3% KOH in 1:1 MeOH-H2O containing a small amount Na2S2O4 20 hrs. at 20° under N, and the solution adjusted to pH .apprx.1, kept 3 hrs., and worked up to give 72.2% VIII, b0.01 150-70°, m. 185-6° (CH2Cl2-Et2O). VIII was also formed in 95.5% yield when 213 mg. III was refluxed 3 days with anhydrous HCO2H. Condensation of 350 mg. I with 328 mg. 1-methyl-2-quinolone in 1.5 ml. iso-PrOH containing 147 mg. K 15 hrs. at 100° gave 32% IX, m. 226-9°. Pertinent uv, ir, and N.M.R. spectral data were given.
IT **734-48-5**, 1-Naphthoic acid, 1,2,3,4-tetrahydro-2-(o-hydroxyphenyl)-4-oxo-, δ-lactone
(preparation of)
RN 734-48-5 CAPLUS
CN 1-Naphthoic acid, 1,2,3,4-tetrahydro-2-(o-hydroxyphenyl)-4-oxo-, δ-lactone (7CI, 8CI) (CA INDEX NAME)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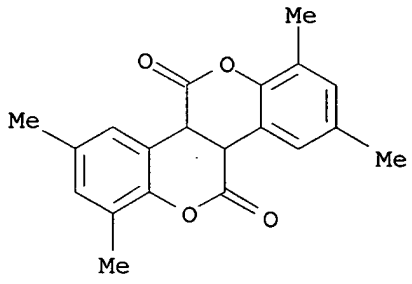
L2 ANSWER 53 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1962:462484 CAPLUS
DOCUMENT NUMBER: 57:62484
ORIGINAL REFERENCE NO.: 57:12377f-h
TITLE: Condensation of some oxo esters with 2,4- and 2,6-xylenols
AUTHOR(S): Smith, Robert V.; Bealor, Mark D.
CORPORATE SOURCE: S. C. Johnson & Son, Inc., Racine, WI
SOURCE: Journal of Organic Chemistry (1962), 27, 3092-6
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The condensation of several oxo dibasic acid esters with 2,4- and 2,6-xylenols in cold concentrated H_2SO_4 was carried out. In the case of 2,6-xylenol, the corresponding bisphenol acids or esters were obtained with the exception of diethyl α-oxoglutarate, where two products were isolated, α-(3,5-dimethyl-4-hydroxyphenyl)glutaconic anhydride and α,α-bis(3,5-dimethyl-4-hydroxyphenyl)glutaric anhydride. With 2,4-xylenol, several lactones were formed. A spirodilactone was isolated from diethyl α-oxosuccinate. A non-spirodilactone, resulting from rearrangement, was formed from diethyl α-oxoglutarate. Structural assignments are based on elemental, infrared, and nuclear magnetic resonance.

IT **94549-82-3**, Succinic acid, 2,3-bis(2-hydroxy-3,5-xylyl)-, di-δ-lactone
(preparation of)
RN 94549-82-3 CAPLUS
CN Succinic acid, 2,3-bis(2-hydroxy-3,5-xylyl)-, di-δ-lactone (7CI) (CA INDEX NAME)



L42 ANSWER 54 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1961:87402 CAPLUS
DOCUMENT NUMBER: 55:87402
ORIGINAL REFERENCE NO.: 55:16502c-i,16503a-e
TITLE: Ozonolysis of polycyclic hydrocarbons. II
AUTHOR(S): Copeland, P. G.; Dean, R. E.; McNeil, D.
CORPORATE SOURCE: Coal Tar Research Assoc., Gomersal, UK
SOURCE: Journal of the Chemical Society, Abstracts (1961) 1232-8
CODEN: JCSAAZ; ISSN: 0590-9791
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 55:87402

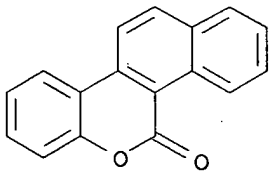
AB cf. CA 55, 1555h. The ozonolysis of phenanthrene (I), chrysene (II), picene (III), benzo[g]chrysene (IV), dibenzo[cg]phenanthrene (V), triphenylene (VI), and benz[a]anthracene (VII) was described. In each case, O3 attacked the bond(s) possessing the lowest bond localization energy. Improved prepns. of these hydrocarbons were also reported. I (1.78 g.) in 60 ml. CCl4 treated at -20° with an equimolar amount of O3, and the ozonide purified via CHCl3-ligroine gave a product, m. 131-2°. The crude ozonide (1.78 g.) in 50 ml. H2O and 50 ml. C5H5N at 60-5° treated with 6.5 g. KMnO4 gave 81% diphenic acid (VIII), m. 230-1°. In another experiment, the crude ozonide from 1.78 g. I kept 12 hrs. in 50 ml. H2O and 50 ml. C5H5N gave 2,2'-diformylbiphenyl, isolated in 34% yield as the dioxime, prisms, m. 180° (aqueous alc.). Oxidation of 1.78 g. I gave 34% unchanged I, 51% phenanthraquinone, and 5% VIII. With C5H5N as the solvent (at 0°) about 1.7 moles O3 was required. Permanganate decomposition gave 74% crude VIII. Ozonolysis of 3.56 g. I in 60 ml. (Cl2CH)2 at 0°, followed by treatment (1 hr.) with 15 ml. 30% H2O2 and 50 ml. 10% NaOH gave 2.82 g. of an alkali-insol. residue. Acidification of the filtrate gave 0.65 g. crude VIII. II, m. 254-5°, (2.28 g.) in (Cl2CH)2 similarly treated with O3 gave 1.4 g. 2-(o-carboxyphenyl)-1-naphthoic acid (IX), m. 213-14° (10% HCl); di-Me ester, prisms, m. 93-4°. Decarboxylation of IX with soda-lime gave 71% 2-phenylnaphthalene, m. 101-2°. Treatment of 2.28 g. II with KMnO4 in C5H5N gave 2.05 g. II and 0.17 g. chrysene-5,6-quinone (X). Decomposition of II ozonide with alkaline H2O2 gave an alkali-insol. resin and no pure acid. II (7.25 g.) in 1200 ml. AcOH at 85-90° treated 3 hrs. with 40 ml. 30% H2O2, the mixture stirred 5 hrs. at 90°, and the alkali-insol. material chromatographed on Al2O3 gave 1.15 g. unchanged II and 0.63 g. 2-(o-hydroxyphenyl)-1-naphthoic acid lactone (XI), m. 191° (C6H6). Acidification of the alkaline extract gave 2.9 g. IX. X was prepared in 57% yield by oxidation of II with Na2Cr2O7 in AcOH. Oxidation of 5 g. X with H2O2 in AcOH gave 0.53 g. XI and 2.9 g. dicarboxylic acid. III was obtained in 21% yield as plates, m. 365° (C5H5N), by the cyclization of 1,2-di-α-naphthylethane (XII) with AlCl3. XII was prepared as follows: MeMgI (from 120 g. MeI) and 124 g. 1-chloromethylnaphthalene in 250 ml. Et2O refluxed 1.5 hrs. gave (after an addnl. 2 hrs. of reflux) 57.5 g. XII, m. 162-3° (alc.-C6H6). III (2.78 g.) in 60 ml. (Cl2CH)2 similarly ozonized gave 1.35 g. p-terphenyl-2,2',3',2''-tetracarboxylic acid 2',3'-anhydride (XIII), m. 284-6° (decomposition) (aqueous Me2CO). Decarboxylation of XIII with soda lime gave 67% terphenyl, m. 210°; di-Me ester of XIII, m. 207°. Chromatography of the mother liquor from this ester on Al2O3 gave the tetramethyl ester, m. 115° (ligroine). When 1.39 g. III was treated with an equimolar amount of O3, 44% III was recovered and 9%

XIII isolated. Benzo[g]chrysene-11,12-dicarboxylic anhydride (3.3 g.), 3.3 g. Cu powder, and 25 ml. quinoline refluxed 2 hrs. and the residue chromatographed on Al2O3 gave 1.45 g. IV, m. 116° (AcOH). Cyclization of 1.9 g. 1',2-epoxide from 1-(2-biphenylyl)-3,4-dinydronaphthalene with HBr in AcOH gave 1.3 g. 11,12-dihydrobenzo[g]chrysene (XIV), m. 136-7°. XIV (8.7 g.) dehydrogenated during 24 hrs. with 2 g. 10% Pd-C in 150 ml. p-cymene in a stream of CO2 gave 7.8 g. IV. IV (2.78 g.) in 60 ml. (Cl2CH)2 at 0° treated with O3 gave 69% 10-(o-carboxyphenyl)phenanthrene-9-carboxylic acid (XV), m. 286° (decomposition); di-Me ester m. 173° (MeOH). Decarboxylation of XV with Cu powder gave 70% 9-phenylphenanthrene, m. 105°. 3,3',4,4'-Tetrahydro-1,1'-binaphthyl was converted to V. The final stage was improved as follows: a slow stream of CO2 passed during 2 days through a mixture of 1,2,7,8-tetrahydrodibenzo[cg]phenanthrene (7.27 g.), 2.5 g. 10% Pd-C, and 150 ml. p-cymene and the residue chromatographed on Al2O3 gave 4.12 g. V, prisms, m. 181-2°, and 1.54 g. benzo[ghi]perylene, yellow prisms, m. 280-1° (xylene). V (2.78 g.) similarly ozonized gave 2.64 g. o-terphenyl-2,2'',3',6'-tetracarboxylic acid (XVI), m. 302° (decomposition); tetramethyl ester m. 125° (ligroine). Decarboxylation of XVI with soda lime gave 14.5% VI, m. 199°, whereas Cu and quinoline gave 60% o-terphenyl, m. 57°. Distillation of o-terphenyl with soda lime gave 5% VI. VI (2.28 g.) similarly ozonized at 0° gave 22% phenanthrene-9,10-dicarboxylic acid anhydride, m. 315-16°. The acidic filtrate gave 0.19 g. VIII. Decomposition of the ozonide with alkaline peroxide gave the anhydride and VIII in similar yield. Absorption of 3 or 4 moles O3 led to resins, from which 16% and 20% VIII was isolated. VII (2.28 g.) similarly ozonized and the product chromatographed gave 28% unchanged VII and 13% benz[a]anthracene-7,12-quinone (XVII), m. 169°. Decomposition of the ozonide with KMnO4 in aqueous C5H5N and acidification of the alkaline liquor gave 0.24 g. 3-(o-carboxyphenyl)-2-naphthoic acid (XVIII), m. 250° (10% HCl); di-Me ester, rhombs, m. 87°. Decarboxylation of XVIII with soda lime gave 66% 2-phenylnaphthalene, m. 101-2°. Absorption of 2 moles O3 by VII gave 17% each XVII and XVIII. Absorption of 3 moles O3 afforded an ozonide, which decomposed spontaneously when dried. VII (2.28 g.) treated with 1 mole O3 and the ozonide decomposed with alkaline peroxide gave 0.72 g. VII and 21.6% XVII. VII (5 g.) oxidized in AcOH with 30% H2O2 and the alkali insol. material chromatographed on activated Al2O3 gave 2.1 g. XVII and 1.31 g. XVIII. XVII (2.58 g.) in 60 ml. CHCl3 at -20° treated with 20 millimoles O3, then treated with alkaline H2O2, heated 1 hr. at 60°, and the product isolated gave 2.37 g. anthraquinone-1,2-dicarboxylic acid, m. 320-2° (H2O); di-Me ester, yellow prisms, m. 210-11° (EtOAc). The acid yielded 91% anthraquinone on decarboxylation with Cu.

IT **4708-17-2**, 1-Naphthoic acid, 2-(o-hydroxyphenyl)-, δ-lactone (preparation of)

RN 4708-17-2 CAPLUS

CN 5H-Benzo[b]naphtho[2,1-d]pyran-5-one (8CI, 9CI) (CA INDEX NAME)



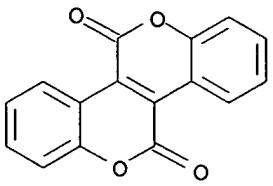
L22 ANSWER 55 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1960:2218 CAPLUS
DOCUMENT NUMBER: 54:2218
ORIGINAL REFERENCE NO.: 54:518b-i,519a
TITLE: Synthesis of furano compounds. XV. 3-Acylisocou maranones and the rearrangement of their phenylhydrazones
AUTHOR(S): Chatterjea, J. N.
CORPORATE SOURCE: Sci. Coll., Patna
SOURCE: J. Indian Chem. Soc. (1959), 36, 69-75
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB cf. C.A. 53, 15037e. It has been shown that the phenylhydrazones of 3-acylisocoumaranones, like those of thiooxindoles (Glauert and Mann, C.A. 47, 1129i) and 3-acylindoles (Alberti, C.A. 42, 2963i), underwent rearrangement to the related pyrazolones by the action of HCl or heat. The acylisocoumaranones were prepared by the action of N,N'-diarylamidines on isocoumaranone (I) or by the direct Gattermann synthesis with I (G. and M., C.A. 47, 1125g). I (1.0 g.) with 1.4 g. diphenylformamidine gave 1.4 g. yellow anil (II), m. 160-1°. II (2.5 g.) boiled with 20 cc. 10% NaOH yielded 0.85 g. 3-formylcoumaran-2-one (III), m. 169 (dilute EtOH); phenyl hydrazone, cream colored from alc., m. 176° (quick heating) was converted at m. p. or by boiling 2-3 hrs. with alc. HCl (10%) to 4-o-hydroxyphenyl-1-phenylpyrazol-5-one, m. 233° (EtOH). II (0.4 g.) boiled 4 hrs. with a mixture of 3 cc. HOAc and 0.3 cc. HCl, gave 0.1 g. coumarone. Similarly, 1.0 g. I and 1.5 g. diphenylacetamidine gave 1.1 g. anil as needles (EtOH), m. 134°, converted to 0.55 g. 3-acetylisocoumaranone, m. 135-6° (dilute EtOH); phenylhydrazone (IV), colorless leaflets, m. 170°. I (0.5 g.) and 0.75 g. N,N'-diphenylbenzamidine gave 0.5 g. anil (V), m. 209°; this boiled 4 hrs. with HOAc-HCl gave 2-phenylcoumarone (VI), which was hydrolyzed by refluxing 10 min. with 10% alc. NaOH, to give a mixture of unchanged material, VI, and 3-benzoylisocoumaranone (VII), m. 100°. Ultraviolet absorption spectrum of VII showed λ 232, 252, and 339 mμ, ε 11,589, 13,169, and 11,026 in alc. and infrared spectrum (KBr pellet, 1% weight/weight) λ 5.93, 6.15, 6.70, 6.91, 7.45, 8.03, 8.24, 8.48, 8.58 and 8.68. IV and 3-o-hydroxyphenylacetylisocoumaranone phenylhydrazone yielded 4-o-hydroxyphenyl-3-methyl (and 3-o-hydroxytolyl)-1-phenylpyrazol-5-one, m. 201-2° and 224°, resp. (both from EtOH), on boiling with alc. 10% HCl) 2-3 hrs. VII gave the corresponding pyrazolone, m. 145° (EtOH) in crude form merely by keeping it 12 days in cold with PhNHNH2 in alc. The acylation of I by heating with acid chlorides in C5H5N gave polymethines of the type o-C6H4.O.CO.C:CRNCHCH:CHCH:CHC:C(OH).O.C6H4-o (VIII) (Pfeiffer and Enders, C.A. 45, 9047e), characterized by the color changes from red or brownish red to blue or green, and a yellow by-product, m. 305°, identified as 3,4,7,8-dibenzonaphthyrone (IX). The following polymethines were also prepared (R and m.p. given): p-tolyl, 268-9° (decomposition); p-anisyl, 255° (decomposition), and m-chlorophenyl, 260° (decomposition). Polymethines were also obtained by condensation of Zincke aldehyde (loc. cit.) with the reactive methylene groups in coumaranone, thioindoxyl, and 1,3-dioxohydrindene to give condensation compds., m. 232°, 266° (decomposition), and 275° (decomposition), resp. The structure of IX was confirmed by synthesis of isooxindigo (X) (Chovin, C.A. 37, 27371) and its isomerization to IX by heating 15 hrs. with C5H5N at 100°. I (1.5 g.) heated 18 hrs. at 100° with C5H5N only, cooled, 2 cc. alc. added and refrigerated 1 week gave IX, yellow needles

(HOAc), thus accounting for its presence in these reactions. Ultraviolet and infrared data were given for IX and I and compared with those for X. IX absorbed a mole of H (PtO2-HOAc) to give a mixture of colorless, stereoisomerides from which 1 component was isolated as plates, m. 218° (HOAc). Thiooxindole gave only intractable tar with warm C5H5N. Coumaranone (1.0 g.) heated, 48 hrs., with 5 cc. C5H5N gave only 10 mg. of s-tris-coumaronobenzene, m. above 360° (xylene) (cf. C.A. 33, 33631). 1,3-Dioxohydrindene (0.5 g.) heated, 0.5 hr., with 2 cc. C5H5N gave 20 mg. trisbenzoylenebenzene, m. above 360°.

IT **13225-81-5**, Fumaric acid, bis(o-hydroxyphenyl)-, di-δ-lactone
(preparation of)

RN 13225-81-5 CAPLUS

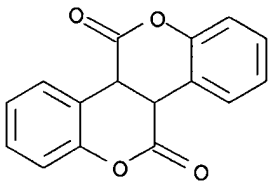
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



IT **20752-64-1**, [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 4b,10b-dihydro- **101279-18-9**, Succinic acid, 2,3-bis(o-hydroxyphenyl)-, di-δ-lactone
(stereoisomers)

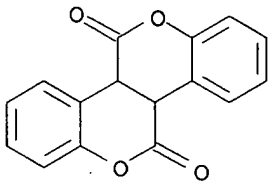
RN 20752-64-1 CAPLUS

CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione, 4b,10b-dihydro- (8CI) (CA INDEX NAME)

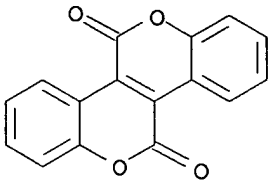


RN 101279-18-9 CAPLUS

CN Succinic acid, 2,3-bis(o-hydroxyphenyl)-, di-δ-lactone (6CI) (CA INDEX NAME)



L22 ANSWER 56 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1945:5964 CAPLUS
DOCUMENT NUMBER: 39:5964
ORIGINAL REFERENCE NO.: 39:932c-h
TITLE: Colored lactones. Isooxindigo and benzonaphthyrones
AUTHOR(S): Chovin, P.
SOURCE: Bull. soc. chim. (1944), 11, 82-90
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB cf. C. A. 37, 2737.1. o-HOC6H4CH2CO2H (I) and BzCH2COCO2H (II) heated at 125° for 20 min. in the presence of PBr3 give 22% of a red compound (III), m. 269.5°, which is either IV or V (R = Ph). A 5% yield of III is obtained from o-HOC6H4COCO2H (VI) and BzCH2CH2CO2H under the same conditions. A similar red compound (R = C6H4Br) (VII) is obtained in 22-5% yield from VI and BrC6H4COCH2CH2CO2H. When I and VI are heated with PBr3 they give 32-6% of an orange compound (VIII), m. 283°, which is either isooxindigo (IX) or 3,4,7,8-dibenzonaphthyrone (X). α-Coumaranone (XI) and coumarandione (XII) in AcOH in the presence of H2SO4 give in the cold 3-5% VIII. When heated with PBr3, XI and XII give 50-8% VIII. Heating XI with SOCl2 gives 15-20% VIII, and with S2Cl2, 30-50%. Since β-coumaranone and S2Cl2 give 50% oxindigo, oxindol and S2Cl2 give 90% isoindigo and 3-hydroxythianaphthene and S2Cl2 give 75% thioindigo, the reaction is general. Ozonolysis of VIII gives an ozonide which decomps. in AcOH to XII and salicylic acid. When VIII is heated with 10% alc. KOH it gives 100% of a yellow isomer (XIII). VIII and HCONH2 (XIV) give 60% XIII, m. 305°. XIII gives an ozonide m. 269° which decomps. to XII when heated. When the Pechmann dye is heated with XIV it gives 75% of a brownish green, insol. compound m. above 500°. Under these conditions, III gives a yellow-brown compound m. 305°, and VII a similar compound m. 339°. XI and Me2NC6H4NO give 37%. coumarandione p-dimethylaminoanil, m. 245°. These reactions indicate, but do not prove, that VIII is IX and XIII is X.
IT **13225-81-5**, Fumaric acid, bis(o-hydroxyphenyl)-, di-δ-lactone
(preparation of)
RN 13225-81-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)

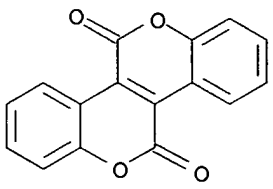


L42 ANSWER 57 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1945:1799 CAPLUS
DOCUMENT NUMBER: 39:1799
ORIGINAL REFERENCE NO.: 39:297h-i,298a
TITLE: Isooxindigo
AUTHOR(S): Chovin, Paul
SOURCE: Compt. rend. (1942), 215, 466-8
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

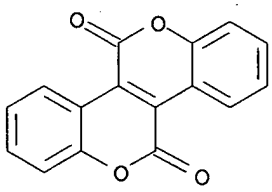
AB cf. C. A. 37, 2737.1. In condensing o-HOC6H4CH2CO2H with o-HOC6H4COCO2H by using PBr3, an orange compound (I) is formed (35%) which possesses 2 lactonic functions, and the di-K salt of which, when treated with HCl, gives a yellow compound (II). Whether I or II is isooxindigo is not proven, and color analogy with other members of the indigo series is not certain proof. Indications that I is isooxindigo and II is dibenzonaphtyrone are (a) α-coumaronone with S2Cl2 gives I exclusively, in 50% yield. By analogy then isooxindigo is I. (b) When the lactones of o-HOC6H4COCO2H acid and o-HOC6H4CH2CO2H are used, I is formed in 50-60% yield. Ozonization of I and II was not decisive to decide which compound was isooxindigo and which compound was dibenzonaphthyrone.

IT **13225-81-5**, Fumaric acid, bis(o-hydroxyphenyl)-, di-δ-lactone
(preparation of)

RN 13225-81-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



L22 ANSWER 58 OF 58 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1943:16719 CAPLUS
DOCUMENT NUMBER: 37:16719
ORIGINAL REFERENCE NO.: 37:2737a-e
TITLE: Colored lactones. 3,4,7,8-Dibenzonaphthyrone, an isomer of oxindigo
AUTHOR(S): Chovin, Paul
SOURCE: Compt. rend. (1941), 212, 549-51
From: Chem. Zentr. 1942, I, 614.
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB cf. C. A. 36, 2258.5. In analogy with the preparation of the red-violet 3,7-diphenylnaphthyrone and the red-orange 3-phenyl-7,8-benzonaphthyrone, the yellow-orange 3,4,7,8-dibenzonaphthyrone, C16H8O4 (I), m. 283°, is obtained by condensation of o-HOC6H4CH2CO2H and o-HOC6H4COCO2H. I is an isomer of oxindigo. In addition there exists a closer relationship between naphthyrones and oxindigo, since under certain conditions there are formed in the preparation of diarylnaphthyrones yellow isomers (II) as by-products; the isomer corresponding to I would be the still unknown isooxindigo (III). However, fractional crystallization and chromatographic analysis gave no indications that III was present besides I in the crude reaction product. The synthesis of III may, however, be possible under different exptl. conditions.
IT **13225-81-5**, Fumaric acid, bis(o-hydroxyphenyl)-, di-δ-lactone
(preparation of)
RN 13225-81-5 CAPLUS
CN [1]Benzopyrano[4,3-c][1]benzopyran-5,11-dione (8CI, 9CI) (CA INDEX NAME)



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FULL ESTIMATED COST                                   292.46     692.21

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
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CA SUBSCRIBER PRICE                                   -42.34     -42.34

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